CMS Commercial Mechanical Services

Shop Drawing Submittals

SDS Sheets

Plumbing 2024

PHONE FAX

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3M™ Fire Barrier Sealant FD 150+

Product Data Sheet

FIRE BARRIER
UP TO 4 HOUR Fire Protection

SMOKE SEAL
L RATED Meets Optional L Requirements

SOUND BARRIER
STC 56 In STC 56-Rated Wall Assembly

ELASTOMERIC
±19% Movement Capability

CLASSIFIED UL

FILL, VOID OR CAVITY MATERIAL
FOR USE IN JOINT SYSTEMS AND
THROUGH-PENETRATION FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
8R57

LISTED C US Intertek
FIRESTOP SYSTEMS
SEE INTERTEK DIRECTORY

ULC LISTED
FILL, VOID OR CAVITY
MATERIALS
8R57

1. Product Description

3M™ Fire Barrier Sealant FD 150+ is an economical, ready to use, gun-grade, elastomeric sealant that dries to form a monolithic flexible firestop seal. 3M™ Fire Barrier Sealant FD 150+ firestops joints and through penetrations through floor slabs, walls and other fire-rated building partitions and assemblies. 3M™ Fire Barrier Sealant FD 150+, when properly installed, helps control the spread of fire, smoke and noxious gasses before, during and after exposure to a fire. 3M™ Fire Barrier Sealant FD 150+ remains elastomeric and exhibits excellent adhesion to a full range of construction substrates.

An economical elastomeric firestop available in multiple colors, to meet virtually any project or specification need.

Available in the following colors: Blue Limestone Red

Product Features

- Firestop tested up to 3 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC-S115
- Fire Resistive Joint System tested up to 4 hours in accordance with ASTM E 1966 (UL 2079)
- ±19% movement capability
- Helps minimize sound transfer*
- Re-enterable / repairable
- Sag-resistant formulation
- Excellent adhesion
- Paintable
- Water clean up

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H_2O and exempt solvents).

*Minimizes noise transfer—STC-Rating of 56 when tested in STC 56-rated wall assembly.

2. Applications

3M™ Fire Barrier Sealant FD 150+ is an ideal product for sealing construction joints and through penetrations such as metallic pipes, conduits, power and communication cables. 3M™ Fire Barrier Sealant FD 150+ helps control the spread of fire and helps limit the spread of noxious gasses, smoke and water when installed in accordance with a UL or Intertek listed through penetration or fire resistive joint assembly.

3. Specifications

3M™ Fire Barrier Sealant FD 150+ shall be a one-component, ready-to-use, gun-grade, elastomeric sealant. The sealant shall be listed by independent test agencies such as Intertek or UL. 3M™ Fire Barrier Sealant FD 150+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems, ASTM E 1966 (UL 2079) Standard Test Method for Fire Resistive Joint Systems and CAN/ULC-S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Sealant FD 150+ shall meet the requirements of the IBC, IRC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NBCC.

Typically Specified Divisions
Division 7

Section 07 84 00 – Firestopping

Related Sections
Section 07 84 16 – Annular Space Protection
Section 07 84 43 – Fire-Resistant Joint Sealants
Section 07 86 00 – Smoke Seals
Section 07 87 00 – Smoke Containment Barriers
Section 07 27 00 – Air Barriers
Section 21 00 00 – Fire Suppression
Section 22 00 00 – Plumbing
Section 26 00 00 – Electrical

4. Performance & Typical Physical Properties

Colors Available:	Blue, Limestone and Red
Extension/compression:	Capability of ±19%
Application Temperature Range: (ASTM C 1299)	40° to 122°F (4° to 50°C)
Service Temperature Range:	-20° to 180°F (-28° to 82°C)
STC Acoustic Barrier: (ASTM E 90 and ASTM E 413)	56 when tested in STC 56 rated wall assembly
Surface Burning: (ASTM E 84)	Flame Spread 0 Smoke Development 0

Hardness (ASTM D 2240 Shore A)**:**	60
Tensile Strength:	85 psi (0.59 MPa)
Volume Shrinkage (ASTM C 1241)**:**	39.5%
VOC Less H_2O and Exempt Solvents:	<250 g/L

Dry: Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30–60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3mm) per day.

Meets the intent of LEED® VOC environmental quality requirements.

Unit Volume: 10.1 fl. oz tube (298.7cc, 18.2 in.^{3}), 20 fl. oz. sausage (591.5cc, 36.1 in.^{3}), 28 fl. oz tube (828.1cc, 50.5 in.^{3}), 4.5 gal. pail (.017m^3, 1039.5 in.^{3})

5. Packaging, Storage, Shelf Life

Packaging: Product packaged in cartridge or pail is enclosed in HDPE plastic containers, sausage is packaged in aluminum foil wrap.

Storage: 3M™ Fire Barrier Sealant FD 150+ should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C). Avoid repeated freeze / thaw exposures of the 3M™ Fire Barrier Sealant FD 150+ while still in the packaging.

Shelf Life: 3M™ Fire Barrier Sealant FD 150+ shelf life is 18 months in original unopened containers from date of packaging when stored above 68°F (20°C).

Lot numbering: First to sixth digit = Date of Production (MMDDYY)
Seventh indicator = dash symbol (-) Eighth digit = shift number

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.

Preparatory Work: The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Fire Barrier Sealant FD 150+. Ensure that the surface of the substrates are not wet and are frost free. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.

Installation Details: Install the applicable depth of backing material, if required, as detailed within the applicable UL, Intertek or other third-party listed system. Cut the end of the 3M™ Fire Barrier Sealant FD 150+ tube spout to achieve the desired bead width when applying. Install the applicable depth of 3M™ Fire Barrier Sealant FD 150+ into the opening flush with the surface of the substrate, or as detailed within the applicable listed system, at the required depth for the assembly and rating that is required. Tool within 5 minutes. Clean all tools immediately after use with water.

Limitations: Do not apply 3M™ Fire Barrier Sealant FD 150+ when surrounding temperature is less than 40°F (4°C) and in conditions when seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Fire Barrier Sealant FD 150+ to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially-vulcanized rubber) Do not apply 3M™ Fire Barrier Sealant FD 150+ to wet or frost-coated surfaces or areas that are continuously damp or immersed in water.

NOTICE: This product is not acceptable for use with chlorinated polyvinylchloride (CPVC) pipes.

7. Maintenance

No maintenance is expected when installed in accordance with the applicable UL, Intertek or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Sealant FD 150+ is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable listed system, with a minimum 1/2 in. (12.7mm) overlap onto the adjacent material.

8. Availability

3M™ Fire Barrier Sealant FD 150+ is available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Sealant FD 150+ is available in 10.1 fl. oz. cartridges, 20.0 oz. sausages, 28.0 fl. oz. cartridges and 4.5 gallon pails. For additional technical and purchasing information regarding this and other 3M Fire Protection Products, please call: 1-800-328-1687 or visit www.3M.com/firestop.

9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) prior to handling and disposal.

3M

Building and Commercial Services Division
3M Center, Building 223-2N-21
St. Paul, MN 55144-1000 USA
1-800-328-1687
www.3M.com/firestop

Reference Number 98-0213-4610-5

Masters Orange T-Tape

Oatey

Version No: **1.3**
Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: **12/22/2020**
Print Date: **12/22/2020**
S.GHS.CAN.EN

SECTION 1 Identification

Product Identifier

Product name	Masters Orange T-Tape
Synonyms	Not Available
Other means of identification	ULC260, ULC540, ULC640V, ULC260V, ULC1296, ULC1296V, TOA260, TOC540, TOD540

Recommended use of the chemical and restrictions on use

Relevant identified uses	Thread Sealing Tape

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Oatey**
Address	620 Steven Court, New Market, ON L3Y 622 Canada
Telephone	905-898-2557
Fax	Not Available
Website	Not Available
Email	info@oatey.com

Emergency phone number

Association / Organisation	**ChemTrec**
Emergency telephone numbers	1-800-424-9300 (Outside the US 1-703-527-3887)
Other emergency telephone numbers	Emergency First Aid: 1-877-740-5015

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Classification	Exempt (manufactured article)

Label elements

Hazard pictogram(s)	Not Applicable
Signal word	**Exempt (manufactured article)**

Hazard statement(s)

Exempt (manufactured article)

Physical and Health hazard(s) not otherwise classified

Exempt (manufactured article)

Page 1 continued...

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name

The components are not hazardous or are below required disclosure limits.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	Not likely, due to the form of the product.
Skin Contact	Not likely, due to the form of the product.
Inhalation	Not likely, due to the form of the product.
Ingestion	Not likely, due to the form of the product.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
For polytetrafluoroethylene (PTFE) and other related polyfluorinated polymers:
Pyrolysis products of this material have been known to produce an influenza-like syndrome in man, lasting 24-48 hours.
(ILO)

SECTION 5 Fire-fighting measures

Extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Special hazards arising from the substrate or mixture

Fire Incompatibility	During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for fire-fighters

Fire Fighting	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.
Fire/Explosion Hazard	‣ Polytetrafluoroethylene (PTFE) and related polyfluorinated polymers does not burn without an external flame. ‣ WARNING: Wear neoprene gloves when handling refuse from fire where polytetrafluoroethylene (PTFE) was present.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Continued...

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Sweep up an collect as harmless organic matter.
Major Spills	Sweep up an collect as harmless organic matter.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	Observe good industrial hygiene practices.
Other information	‣ Store away from incompatible materials.

Conditions for safe storage, including any incompatibilities

Suitable container	Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards. If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.
Storage incompatibility	For polytetrafluoroethylene (PTFE) and other related polyfluorinated polymers: Avoid storage with strong oxidising agents, tetrafluoroethylene, hexafluoroethylene, perfluoroisobutylene, carbonyl fluoride and hydrogen fluoride.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Exposure controls

Appropriate engineering controls	Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use. Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment.
Personal protection	
Eye and face protection	If eye contact is likely, safety glasses with side shields or chemical type goggles should be worn.
Skin protection	See Hand protection below
Hands/feet protection	Not normally needed.
Body protection	See Other protection below
Other protection	Not normally needed.

Respiratory protection

Respiratory protection not normally required due to the physical form of the product.

SECTION 9 Physical and chemical properties

Continued...

Information on basic physical and chemical properties

Appearance	Soft, odorless, pliable film, pinkish orange in color

Physical state	article	**Relative density (Water = 1)**	1.65
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	327	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Applicable	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Applicable	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Applicable	**VOC g/L**	< 0.5

SECTION 10 Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Temperatures above 315 °C. Resin with slowly thermally degrade into a serious of unstable, short-lived fluorocarbons and hydrofluoric acid. Contact with incompatible materials.
Incompatible materials	Sodium. Potassium. Alloy.
Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Not normally a hazard due to non-volatile nature of product
Ingestion	Expected to be a low ingestion hazard.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact. Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Inhalation of fumes resulting from thermal degradation (over 315ºC/ 600°F) may cause 'fume fever' which has symptoms similar to metal fume fever or influenza (chills, fever, tightness of the chest).

Continued...

Masters Orange T-Tape	**TOXICITY**	**IRRITATION**
	Not Available	Not Available

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✗	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✗

SECTION 12 Ecological information

Toxicity

Masters Orange T-Tape	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available

For polytetrafluoroethylene (PTFE) and other related polyfluorinated polymers:
Ecotoxicity is expected to be low based on the near zero water solubility of the polymer. Material is considered inert and is not expected to e biodegradable or toxic.

Persistence and degradability

Ingredient	**Persistence: Water/Soil**	**Persistence: Air**
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	**Bioaccumulation**
	No Data available for all ingredients

Mobility in soil

Ingredient	**Mobility**
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	No special precautions are needed for disposal of product.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Continued...

Not Applicable

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

National Inventory Status

National Inventory	Status
Canada - DSL	Exempt (manufactured article)
Canada - NDSL	Exempt (manufactured article)

SECTION 16 Other information

Revision Date	12/22/2020
Initial Date	11/17/2020

Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

SILICONE PEINTURABLE - CLAIR

FDS – FICHE DE DONNÉE DE SÉCURITÉ

SECTION I: IDENTIFICATION

Nom du produit: Silicone Peinturable Masters® - Clair
Utilization: scellant au silicone – clair

Nom et adresse du fournisseur:
G.F.Thompson cie let.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Nom et adresee du fabricant:
Se référer au fournisseur.

Numéro de téléphone d'information:
Lundi à vendredi, 7h30à 17h00, Heure de l'Est américaine:
(905) 898-2557
(800) 499-3673 (ligne sans frais)
Numéro de téléphone d'urgence : 905-252-6219 ou 647-448-2050

SECTION II: IDENTIFICATION DES DANGERS

Classification
Irritation cutanée - catégorie 2; Irritation oculaire - catégorie 2B
Éléments d'étiquetage

Mention d'avertissement :
Attention

Mention(s) de(s) danger(s) :
Provoque une irritation de la peau et des yeux.

Conseil(s) de prudence :
Prévention :
Se laver soigneusement les mains et la peau après avoir manipulé.
Porter des gants de protection.

Intervention :
EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau.
EN CAS DE CONTACT AVEC LES YEUX : Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
Traitement spécifique (voir les instructions complémentaires de premiers secours sur cette étiquette).
En cas d'irritation cutanée: Demander un avis médical/Consulter un médecin.
Enlever les vêtements contaminés et les laver avant réutilisation.

Stockage :
Stocker dans un endroit sec. Stocker dans un récipient fermé.

Élimination :
Éliminer le contenu et le récipient conformément à la réglementation locale, régionale, nationale et internationale.
Autres dangers
Emits toxic gases when heated.

SILICONE PEINTURABLE - CLAIR

SECTION III: COMPOSITION/INFORMATION SUR LES INGRÉDIENTS

Ne contient pas d'ingrédients nocifs. Mélange :

Notes

58.9% of the mixture contains ingredients of unknown toxicity.

SECTION IV: PREMIERS SOINS

Mesures de premiers soins

Inhalation

Transporter à l'air frais. Consulter un médecin si vous vous sentez mal ou si vous êtes inquiet.

Contact avec la peau

Rincer doucement et en profondeur à l'eau tiède avec un savon doux pendant 5 minutes. Demander un avis médical ou consulter un médecin en cas de malaise ou des inquiétudes.

Contact avec les yeux

Rincer les yeux contaminés à l'eau tiède, en douceur, pendant 5 minutes, tout en maintenant les paupières ouvertes. Si l'irritation des yeux persiste, demander un avis médical ou consulter un médecin.

Ingestion

Consulter un médecin si vous vous sentez mal ou si vous êtes inquiet. Rincer la bouche avec de l'eau. Ne pas faire vomir.

Commentaires sur les premiers soins

En cas d'exposition prouvée ou suspectée, demander un avis médical ou consulter un médecin.

Symptômes et effets les plus importants, qu'ils soient aigus ou retardés

Inconnu.

Prise en charge médicale immédiate ou d'un traitement spécial Instructions particulières

Sans objet.

Problèmes de santé aggravés par une exposition au produit

Aucun connu.

SECTION V: MESURES À PRENDRE EN CAS D'INCENDIE

Agents extincteurs

Agents extincteurs appropriés

Dioxyde de carbone, poudre chimique sèche, mousse extinctrice appropriée, eau pulvérisée ou brouillard d'eau.

Agents extincteurs inappropriés

Aucun connu**.**

Dangers spécifiques du produit

Durant un incendie, les matières dangereuses suivantes peuvent être produites : monoxyde de carbone très toxique et dioxyde de carbone; formaldéhyde très toxique et inflammable; silicon oxides.

Équipements de protection spéciaux et précautions spéciales pour les pompiers

Avant d'entrer, surtout dans les zones confinées, utilisez un moniteur approprié afin de vérifier ce qui suit : la présence de gaz ou de vapeurs toxiques.

Les pompiers peuvent entrer dans la zone s'ils portent un APRA à pression positive et une tenue de feu complète.

SECTION VI: MESURES À PRENDRE EN CAS DE DÉVERSEMENTS ACCIDENTELS

Précautions individuelles, équipements de protection et mesures d'urgence

Utiliser l'équipement de protection individuel recommandé à la Section 8 de la présente fiche de donnée de sécurité.

Précautions relatives à l'environnement

Il est bon de prévenir des rejets dans l'environnement. Empêcher la pénétration dans les égouts, le sol, ou les cours d'eau.

Méthodes et matériaux pour le confinement et le nettoyage

Contenir et absorber le déversement avec un absorbant qui ne réagit pas avec le produit déversé. Placer l'absorbant utilisé dans des récipients appropriés scellés et étiquetés en vue de leur élimination. Endiguer le produit déversé afin de prévenir le ruissellement. Examiner la Section 13 (Données sur l'élimination) de la présente fiche de donnée de sécurité.

SECTION XII: MANIPULATION ET STOCKAGE

Précautions relatives à la sûreté en matière de manutention

Les précautions suivantes constituent des pratiques exemplaires : éviter de respirer le produit; éviter tout contact cutané et oculaire; se laver les mains après la manutention. N'utiliser qu'aux endroits où la ventilation est adéquate.

Conditions de sûreté en matière de stockage

Aucune exigence précise quant à l'aire de stockage. Adhérer à tous les règlements applicables en matière de santé et de sécurité, et à tous les codes de prévention des incendies et aux codes du bâtiment.

SECTION VIII: CONTRÔLE DE L'EXPOSITION/PROTECTION INDIVIDUELLE

Paramètres de contrôle

	ACGIH TLV		**OSHA PEL**		**AIHA WEEL**	
Nom chimique	TWA	STEL	TWA	Ceiling	8-Hr TWA	TWA

Contrôles d'ingénierie appropriés

Le niveau de risque de ce produit est relativement bas. Une ventilation générale est habituellement adéquate.

Mesures de protection individuelle

Protection des yeux et du visage

Non requis, mais le port de lunette de sécurité ou de lunettes de protection contre les produits chimiques constitue une pratique exemplaire.

Protection de la peau

Porter des vêtements de protection contre les produits chimiques (p. ex. gants, tabliers, bottes).

Protection des voies respiratoires

Habituellement non requis si le produit est utilisé selon les directives.

SECTION IX: PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

Propriétés physiques et chimiques de base

Apparence	Pâte visqueuse incolore claire.
Odeur	D'alcool
Seuil olfactif	Pas disponible
pH	7.5- 8.5
Point de fusion/Point de congélation	Pas disponible (fusion); Pas disponible (congélation)
Point initial d'ébullition et domaine d'ébullition	Sans objet
Point d'éclair	>93.3 °C (en vase clos)
Taux d'évaporation	Sans objet
Inflammabilité (solides et gaz)	Ne brûle pas.
Limites supérieures/inférieures d'Inflammabilité ou d'Explosibilité	Pas disponible (supérieure); Pas disponible (inférieure)
Tension de vapeur	Sans objet
Densité de vapeur	Pas disponible

Densité relative (eau = 1)	Pas disponible
Solubilité	Pas disponible (l'eau) Pas disponible (autres liquides)
Coéfficient de partage n-octanol/eau	Pas disponible
Température d'auto-inflammation	Sans objet
Température de décomposition	Pas disponible
Viscosité	Pas disponible (cinématique); Pas disponible (dynamique)

Autres informations

Volatile Organic Content	16.2 g/L,<1.5% w/w, CARB Method 310

SECTION X: STABILITÉ ET RÉACTIVITÉ

Réactivité
Non réactif dans des conditions normales d'utilisation.
Stabilité chimique
Habituellement stable.
Risque de réactions dangereuses
Se décompose en présence de : température accrue.
Conditions à éviter
Exposition prolongée à de hautes températures. Températures au-dessus de 150.0 ºC (302.0 ºF)
Matériaux incompatibles
Forme des produits chimiques corrosifs au contact de : eau. Forme des produits chimiques toxiques au contact de : agents oxydants forts (p. ex. acide perchlorique).
Produits de décomposition dangereux
Formaldéhyde inflammable et très toxique.

SECTION XI: INFORMATION TOXICOLOGIQUE

Les renseignements présentés ci-dessous s'appliquent au produit original, à moins d'indications contraires.
Voies d'exposition probables
Contact avec la peau; ingestion; contact oculaire.
Toxicité aiguë

Nom Chimique	CL 50	DL50 (Orale)	DL50 (cutanée)

Corrosion/Irritation cutanée
Aucun renseignement n'a été trouvé. Lésions oculaires graves/Irritation oculaire Aucun renseignement n'a été trouvé.
Toxicité pour certains organes cibles - Exposition unique Inhalation
Aucun renseignement trouvé. Absorption par la peau Aucun renseignement trouvé. Ingestion
Aucun renseignement trouvé.
Danger par aspiration
Aucun renseignement trouvé.
Toxicité pour certains organes cibles - Expositions répétées
Aucun renseignement trouvé. Sensibilisation respiratoire ou cutanée Aucun renseignement n'a été trouvé.

Cancérogénicité

Nom chimique	CIRC	ACGIH	NTP	OSHA

Les études limitées qui sont disponibles ne permettent pas de tirer de conclusions.
Signification des abréviations
ACGIH® = American Conference of Governmental Industrial Hygienists. CIRC = Centre International de Recherche sur le Cancer. Groupe 3 = Inclassables quant à sa cancérogénicité pour l'humain.

Toxicité pour la reproduction Développement de la progéniture
Les études limitées qui sont disponibles ne permettent pas de tirer de conclusions.
Fonction sexuelle et la fertilité
Les études limitées qui sont disponibles ne permettent pas de tirer de conclusions.
Effets sur ou via l'allaitement
Les études limitées qui sont disponibles ne permettent pas de tirer de conclusions.
Mutagénicité sur les cellules germinales
Les études limitées qui sont disponibles ne permettent pas de tirer de conclusions.
Effets d'interaction
Aucun renseignement n'a été trouvé.

SECTION XII: DONNÉES ÉCOLOGIQUES

Pour les Données Écologique, se référer au fournisseur

SECTION XIII: DONNÉES SUR L'ÉLIMINATION

Pour les Données SUR L'ÉLIMINATION, se référer au fournisseur

SECTION XIV: INFORMATIONS RELATIVES AU TRANSPORT

Pour les INFORMATIONS RELATIVES AU TRANSPORT, se référer au fournisseur

SECTION XV: INFORMATION SUR LA RÉGLEMENTATION

Pour les INFORMATION SUR LA RÉGLEMENTATION, se référer au fournisseur

SECTION XVI: AUTRES INFORMATIONS

Préparée par: G. F. Thompson Co. Ltd
Numéro de téléphone: 905-898-2557
Date de préparation: Le 12 mai 2020

SDS – SAFETY DATA SHEET

SECTION I: IDENTIFICATION

Product name: MASTERS® SILICONIZED SEALANT - WHITE
Product use: Paintable, Siliconized Latex Sealant

Supplier name and address:
G.F. THOMPSON CO. LTD.
supplier. 620 Steven Court, Unit 11
Newmarket,
Ontario L3Y 6Z2

Manufacturer name and address:
Refer to

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm
EST 905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS IDENTIFICATION

Classification
Skin irritation - Category 2; Eye irritation - Category 2B; Germ cell mutagenicity- Category 1B; Carcinogenicity – Category 1 A; Specific target Organ toxicity (single exposure) – Category 3; Specific target organ toxicity (repeated exposure) – Category 2
Label Elements

Signal Word:
Danger

Hazard Statement(s):
Causes skin and eye irritation.
May cause respiratory irritation.
May cause genetic defects.
May cause cancer
May cause damage to organs through prolonged or repeated exosure

Precautionary Statement(s):
Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice or attention.
Call a POISON CENTRE or doctor if you feel unwell.
Specific treatment (see supplemental first aid instruction on this label).
If skin irritation occurs: Get medical advice or attention.
If eye irritation persists: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.

Storage:

Store in a dry place. Store in a closed container.

Disposal:

Dispose of contents and container in accordance with local, regional, and national and regulations.

Other Hazards

Emits toxic gases when heated.

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt %
Calcium Carbonate	1317-65-3	40 - 70
Titanium Dioxide	13463-67-7	0.5 – 1.5
Ethylene Glycol	107-21-1	0.5 – 1.5
Acetaldehyde	75-07-0	0.1 0 1.0
Vinyl acetate	108-05-4	0.1 0 1.0
Silica, Quartz	14808-60-7	0.1 0 1.0

SECTION IV: FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. Get medical advice or attention if you feel unwell or are concerned.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. If skin irritation occurs, get medical advice or attention.

Eye Contact

Remove contact lenses, if present and easy to do. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

First-aid Comments

If exposed or concerned, get medical advice or attention.

Most Important Symptoms and Effects, Acute and Delayed

If in eyes: causes moderate to severe irritation.

If inhaled: symptoms may include headache, nausea, dizziness, drowsiness and confusion. A severe exposure can cause unconsciousness.

If on skin: skin sensitizer. May cause an allergic skin reaction in some people.

Immediate Medical Attention and Special Treatment

Medical Conditions Aggravated by Exposure

None known.

Target Organs

Nervous system, eyes, respiratory system, skin.

SECTION V: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Product

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde; silicon oxides.

Special Protective Equipment and Precautions for Fire-fighters

Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours. Fire- fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use the personal protective equipment recommended in Section 8 of this safety data sheet.
Environmental Precautions	It is good practice to prevent releases into the environment. Do not allow into any sewer, on the ground or into any waterway.
Methods For Clean-Up	Contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Dike spilled product to prevent runoff. Review Section 13 (Disposal Considerations) of this safety data sheet.

SECTION XII: HANDLING AND STORAGE

Precautions for Safe Handling

It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling. Only use where there is adequate ventilation.

Conditions for Safe Storage

No special requirements for storage area. Comply with all applicable health and safety regulations, fire and building codes.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Calcium carbonate	Not established	Not established	15 mg/m3	Not established	Not established	Not established
Titanium dioxide	10 mg/m3 A4	Not established	15 mg/m3	Not established	Not established	Not established
Acetaldehyde	25 ppm	25 ppm	200 ppm	Not established	Not established	10 ppm
Vinyl acetate	10 ppm	15 ppm	Not established	Not established	Not established	5 ppm
Silica, quartz	0.025 mg/m3	0.025 mg/m3	10 mg/m3	30 mg/m3	Not established	Not established
Ethylene glycol	25 ppm	50 ppm	Not established	Not established	Not established	Not established

Appropriate Engineering Controls

The hazard potential of this product is relatively low. General ventilation is usually adequate.

Individual Protection

Measures Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Not normally required if product is used as directed.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	White paste.
Odour	Alcohol
Odour Threshold	Not available
pH	7.5-8.5
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	> 93.3 °C (Closed Cup)
Evaporation Rate	Not applicable
Flammability (solid, gas)	Will not burn.
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.68 at 25 ºC (77 ºF)
Solubility	Soluble in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)

Other Information

Volatile Organic Content	16.2 g/L, <1.5% w/w CARB Method 310

SECTION X: STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions of use.
Chemical Stability
Normally stable.
Possibility of Hazardous Reactions
Decomposes in the presence of increased temperature.
Conditions to Avoid
Prolonged exposure to high temperatures. Temperatures above 150.0 ºC (302.0 ºF)
Incompatible Materials
Forms corrosive chemicals on contact with: water. Forms toxic chemicals on contact with: strong oxidizing agents (e.g. perchloric acid).
Hazardous Decomposition Products
Very toxic, carbon monoxide, carbon dioxide, corrosive, oxidizing nitrogen oxides.

SECTION XI: TOXICOLOGICAL INFORMATION

Information presented below is for the entire product, unless otherwise specified.
Likely Routes of Exposure
Inhalation, skin contact; ingestion; eye contact.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Calcium Carbonate		>6450 mg/kg (rat)	
Titanium dioxide	>6820 mg/kg (rat) (4-hour exp)	>25000 mg/kg (rat)	>100000 mg/kg (rabbit)
Acetaldehyde	8722 ppm (rat) (4-hour exp)	660 mg/kg (rat)	>5000 mg/kg (rabbit)
Vinyl acetate		4880 mg/kg	
Silica, quartz		500 mg/kg (rat)	
Ethylene Glycol	2725 mg/m3 (rat) (4 hour exp)	4000 mg/kg (female rat)	9530 mg/kg (rabbit)

Skin Corrosion/Irritation
No information was located. Serious Eye Damage/Irritation No information was located.
STOT (Specific Target Organ Toxicity) - Single Exposure
Inhalation
Acetaldehyde category 3. Vinyl acetate category 3.
Skin Absorption
Acetaldehyde category 3. Vinyl acetate category 3.
Ingestion
No information was located.
Aspiration Hazard
No information was located.
STOT (Specific Target Organ Toxicity) - Repeated Exposure
(Vinyl acetate) category 1. (Ethylene glycol) category 2. (Silica, quartz) category 2.
Respiratory and/or Skin Sensitization No information was located.
Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Calcium carbonate	Not Listed	Not designated	Not Listed	Not Listed
Titanium dioxide	Group 2B	A4	Not Listed	Not Listed
Acetaldehyde	Group 2B	A2	Reasonably anticipated	Not Listed
Vinyl acetate	Group 2B	A3	Not Listed	Not Listed
Silica, quartz	Group 1	A2	Known carcinogen	Not Listed
Ethylene glycol	Not Listed	A4	Not Listed	Not Listed

Key to Abbreviations
ACGIH® = American Conference of Governmental Industrial Hygienists. IARC = International Agency for Research on Cancer. Group 3 = Not classifiable as to its carcinogenicity to humans.

Reproductive Toxicity

Development of Offspring
Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility
Conclusions cannot be drawn from the limited studies available.

Effects on or via Lactation
Conclusions cannot be drawn from the limited studies available.

Germ Cell Mutagenicity
Conclusions cannot be drawn from the limited studies available.

Interactive Effects
No information was located.

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information

SECTION XIII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations

SECTION XIV: TRANSPORTATION INFORMATION

Refer to the supplier for Transportation Information

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Information

SECTION XVI: OTHER INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: **May 12,2020**

Masters Pro-Dope

Oatey

Version No: **1.5**
Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: **12/16/2020**
Print Date: **12/16/2020**
S.GHS.CAN.EN

SECTION 1 Identification

Product Identifier

Product name	Masters Pro-Dope
Synonyms	Not Available
Proper shipping name	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. Isopropanol
Other means of identification	PD250BT, PD500BT, PD1L, PD 20L

Recommended use of the chemical and restrictions on use

Relevant identified uses	Pipe Joint Compound for Threaded Metal Pipes

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Oatey**
Address	620 Steven Court, New Market, ON L3Y 622 Canada
Telephone	905-898-2557
Fax	Not Available
Website	Not Available
Email	info@oatey.com

Emergency phone number

Association / Organisation	**ChemTrec**
Emergency telephone numbers	1-800-424-9300 (Outside the US 1-703-527-3887)
Other emergency telephone numbers	Emergency First Aid: 1-877-740-5015

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Classification	Eye Irritation Category 2A, Skin Corrosion/Irritation Category 2, Carcinogenicity Category 1A, Specific target organ toxicity - repeated exposure Category 1, Flammable Solid Category 1

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

Page 1 continued...

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H228	Flammable solid.

Physical and Health hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/fume.
P264	Wash thoroughly after handling.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	Specific treatment (see advice on this label).
P362+P364	Take off contaminated clothing and wash before reuse.
P370+P378	In case of fire: Use water jets for extinction.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P332+P313	If skin irritation occurs: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
14807-96-6*	34	Talc
1332-58-7*	20	Kaolin
13463-67-7*	4.6	Titanium dioxide
13983-17-0*	4.4	Calcium silicate
9002-84-0	1	polytetrafluoroethylene
9004-34-6*	0.7	cellulose
14808-60-7*	<2	silica crystalline - quartz
5131-66-8	10	propylene glycol monobutyl ether - alpha isomer
67-63-0	7	isopropanol

Continued...

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

For **SMALL FIRES**:
Dry chemical, CO2, water spray or foam.
For **LARGE FIRES**:
Water-spray, fog or foam.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Fight fire from a safe distance, with adequate cover. ▸ If safe, switch off electrical equipment until vapour fire hazard removed. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Flammable solid which burns and propagates flame easily, even when partly wetted with water. ▸ Any source of ignition, i.e. friction, heat, sparks or flame, may cause fire or explosion. ▸ May burn fiercely ▸ May form explosive mixtures with air. ▸ May **REIGNITE** after fire is extinguished. ▸ Containers may explode on heating. ▸ Solids may melt and flow when heated or involved in a fire. ▸ Runoff may pollute waterways. ▸ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited. ▸ Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport,

Continued...

	thereby providing a source of ignition. ▸ Decomposition products may be irritating, poisonous or corrosive. Combustion products include: carbon monoxide (CO) carbon dioxide (CO2) other pyrolysis products typical of burning organic material.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources. ▸ **DO NOT**touch or walk through spilled material. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ With clean shovel (preferably non-sparking) place material into clean, dry container and cover loosely. ▸ Move containers from spill area. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ **DO NOT** touch or walk through spilled material. ▸ Control personal contact with the substance, by using protective equipment. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ No smoking, naked lights or ignition sources. ▸ Increase ventilation. ▸ Stop leak if safe to do so. ▸ Contain or cover with sand, earth or vermiculite. ▸ Use only spark-free shovels and explosion proof equipment. ▸ Collect recoverable product into labelled containers for recycling. ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area with water and dike for later disposal; prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of overexposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ **DO NOT** allow material to contact humans, exposed food or food utensils. ▸ Avoid smoking, naked lights or ignition sources. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Avoid contact with incompatible materials. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Working clothes should be laundered separately. Launder contaminated clothing before re-use. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	**FOR MINOR QUANTITIES:** ▸ Store in an indoor fireproof cabinet or in a room of noncombustible construction. ▸ Provide adequate portable fire-extinguishers in or near the storage area.

Continued...

	FOR PACKAGE STORAGE: ▸ Store in original containers in approved flame-proof area. ▸ No smoking, naked lights, heat or ignition sources. ▸ **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped. ▸ Keep containers securely sealed. ▸ Store away from incompatible materials in a cool, dry, well ventilated area. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Protect containers from exposure to weather and from direct sunlight unless: (a) the packages are of metal or plastic construction; (b) the packages are securely closed are not opened for any purpose while in the area where they are stored and (c) adequate precautions are taken to ensure that rain water, which might become contaminated by the dangerous goods, is collected and disposed of safely. ▸ Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	For low viscosity materials and solids: Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C): ▸ Removable head packaging and ▸ cans with friction closures may be used. - Where combination packages are used, there must be sufficient inert absorbent material to absorb completely any leakage that may occur, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic. All combination packages for Packing group I and II must contain cushioning material.
Storage incompatibility	Isopropanol (syn: isopropyl alcohol, IPA): ▸ forms ketones and unstable peroxides on contact with air or oxygen; the presence of ketones especially methyl ethyl ketone (MEK, 2-butanone) will accelerate the rate of peroxidation ▸ reacts violently with strong oxidisers, powdered aluminium (exothermic), crotonaldehyde, diethyl aluminium bromide (ignition), dioxygenyl tetrafluoroborate (ignition/ ambient temperature), chromium trioxide (ignition), potassium-tert-butoxide (ignition), nitroform (possible explosion), oleum (pressure increased in closed container), cobalt chloride, aluminium triisopropoxide, hydrogen plus palladium dust (ignition), oxygen gas, phosgene, phosgene plus iron salts (possible explosion), sodium dichromate plus sulfuric acid (exothermic/ incandescence), triisobutyl aluminium ▸ reacts with phosphorus trichloride forming hydrogen chloride gas ▸ reacts, possibly violently, with alkaline earth and alkali metals, strong acids, strong caustics, acid anhydrides, halogens,aliphatic amines, aluminium isopropoxide, isocyanates, acetaldehyde, barium perchlorate (forms highly explosive perchloric ester compound), benzoyl peroxide, chromic acid, dialkylzincs, dichlorine oxide, ethylene oxide (possible explosion), hexamethylene diisocyanate (possible explosion), hydrogen peroxide (forms explosive compound), hypochlorous acid, isopropyl chlorocarbonate, lithium aluminium hydride, lithium tetrahydroaluminate, nitric acid, nitrogen dioxide, nitrogen tetraoxide (possible explosion), pentafluoroguanidine, perchloric acid (especially hot), permonosulfuric acid, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium, trinitromethane ▸ attacks some plastics, rubber and coatings ▸ reacts with metallic aluminium at high temperature ▸ may generate electrostatic charges Alcohols ▸ are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents. ▸ reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen ▸ react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium ▸ should not be heated above 49 deg. C. when in contact with aluminium equipment

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Nova Scotia Occupational Exposure Limits	Talc	Soapstone	6 mg/m3	Not Available	Not Available	TLV Basis: lower respiratory tract irritation. Particulate matter containing no asbestos and < 1% crystalline silica.

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Nova Scotia Occupational Exposure Limits	Talc	Talc - Containing asbestos fibers	Not Available	Not Available	2 mg/m3	Use asbestos TLV, not to exceed stated ceiling. TLV Basis/Critical Effect(s): asbestosis; cancer
Canada - Nova Scotia Occupational Exposure Limits	Talc	Soapstone	3 mg/m3	Not Available	Not Available	TLV Basis: lower respiratory tract irritation. Particulate matter containing no asbestos and < 1% crystalline silica.
Canada - Nova Scotia Occupational Exposure Limits	Talc	Talc - Containing no asbestos fibers	2 mg/m3	Not Available	Not Available	TLV Basis: lower respiratory tract irritation
Canada - Alberta Occupational Exposure Limits	Talc	Talc Respirable particulate containing no asbestos fibres	2 mg/m3	Not Available	Not Available	Not Available
Canada - Alberta Occupational Exposure Limits	Talc	Soapstone - Respirable	3 mg/m3	Not Available	Not Available	Not Available
Canada - Alberta Occupational Exposure Limits	Talc	Soapstone - Total (no asbestos and less than 1% crystalline silica)	6 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	Talc	Talc, (respirable fraction++)	2 mg/m3	Not Available	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	Talc	Not Available	2 mg/m3	Not Available	Not Available	TLV® Basis: Pulm fibrosis; pulm func
Canada - Manitoba Occupational Exposure Limits	Talc	Not Available	Not Available	Not Available	Not Available	TLV® Basis: Use Asbestos TLV®
Canada - British Columbia Occupational Exposure Limits	Talc	Talc - Containing asbestos fibres	0.1 f/cc	Not Available	Not Available	(K) - should not exceed 2 mg/m3 respirable particulate.
Canada - British Columbia Occupational Exposure Limits	Talc	Talc - Containing no asbestos fibres, Respirable	2 mg/m3	Not Available	Not Available	(E) - the value is for particulate matter containing no asbestos and less than 1% crystalline silica.
Canada - Prince Edward Island Occupational Exposure Limits	Talc	Talc - Containing asbestos fibers	Not Available	Not Available	Not Available	TLV® Basis: Use Asbestos TLV®
Canada - Prince Edward Island Occupational Exposure Limits	Talc	Talc - Containing no asbestos fibers	2 mg/m3	Not Available	Not Available	TLV® Basis: Pulm fibrosis; pulm func
Canada - Ontario Occupational Exposure Limits	Talc	Talc, containing no asbestos	2 f/cc	Not Available	Not Available	(K) Should not exceed 2 mg/m3 respirable particulate mass.
Canada - Ontario Occupational Exposure Limits	Talc	Talc, containing no asbestos (Respirable fraction)	2 mg/m3	Not Available	Not Available	(R) Respirable fraction: means that size fraction of the airborne particulate deposited in the gas-exchange region of the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the ACGIH particle size-selective sampling criteria for airborne particulate matter; and (b) has the cut point of 4 µm at 50 per cent collection efficiency. (E) The value is for particulate matter containing no asbestos and < 1 per cent crystalline silica.
Canada - Northwest Territories Occupational Exposure Limits	Talc	Talc, (respirable fraction)	2 mg/m3	Not Available	Not Available	Not Available

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Talc	Talc, non fibrous	3 mg/m3	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Talc	Talc, fibrous (note 4)	Not Available	Not Available	Not Available	Not Available
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	Kaolin	Kaolin	Not Available	Not Available	Not Available	(See Table 11)
Canada - Nova Scotia Occupational Exposure Limits	Kaolin	Kaolin	2 mg/m3	Not Available	Not Available	TLV Basis: pneumoconiosis. Value is for particulate matter containing no asbestos and <1% crystalline silica.
Canada - Alberta Occupational Exposure Limits	Kaolin	Kaolin respirable	2 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	Kaolin	Kaolin (respirable fraction++)	2 mg/m3	4 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	Kaolin	Not Available	2 mg/m3	Not Available	Not Available	TLV® Basis: Pneumoconiosis
Canada - British Columbia Occupational Exposure Limits	Kaolin	Kaolin, Respirable	2 mg/m3	Not Available	Not Available	(E) - the value is for particulate matter containing no asbestos and less than 1% crystalline silica.
Canada - Prince Edward Island Occupational Exposure Limits	Kaolin	Kaolin	2 mg/m3	Not Available	Not Available	TLV® Basis: Pneumoconiosis
Canada - Northwest Territories Occupational Exposure Limits	Kaolin	Kaolin (respirable fraction)	2 mg/m3	4 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Kaolin	Kaolin	5 mg/m3	Not Available	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	TLV Basis: lower respiratory tract irritation
Canada - Alberta Occupational Exposure Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	20 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	Titanium dioxide	Not Available	10 mg/m3	Not Available	Not Available	TLV® Basis: LRT irr
Canada - British Columbia Occupational Exposure Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	(N) - the 8-hour TWA listed in the Table is for the total dust. The substance also has an 8-hour TWA of 3 mg/m 3 for the respirable fraction.
Canada - Prince Edward Island Occupational Exposure Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	TLV® Basis: LRT irr
Canada - Northwest Territories Occupational Exposure Limits	Titanium dioxide	Titanium dioxide	10 mg/m3	20 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	Not Available

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Calcium silicate	Fibres-Natural Mineral Fibres (note 4) Wollastonite	10 mg/m3	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	Calcium silicate	Fibres-Natural Mineral Fibres (note 4) Wollastonite	5 mg/m3	Not Available	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	polytetrafluoroethylene	Polytetrafluoroethylene decomposition products	Not Available	Not Available	Not Available	Not Available
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	cellulose	Cellulose (paper fibre)	Not Available	Not Available	Not Available	(See Table 11)
Canada - Nova Scotia Occupational Exposure Limits	cellulose	Cellulose	10 mg/m3	Not Available	Not Available	TLV Basis: upper respiratory tract irritation
Canada - Alberta Occupational Exposure Limits	cellulose	Cellulose	10 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	cellulose	Cellulose (paper fibre)	10 mg/m3	20 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	cellulose	Not Available	10 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - British Columbia Occupational Exposure Limits	cellulose	Cellulose	10 mg/m3	Not Available	Not Available	(N) - the 8-hour TWA listed in the Table is for the total dust. The substance also has an 8-hour TWA of 3 mg/m 3 for the respirable fraction.
Canada - Prince Edward Island Occupational Exposure Limits	cellulose	Cellulose	10 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - Northwest Territories Occupational Exposure Limits	cellulose	Cellulose (paper fibre)	10 mg/m3	20 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	cellulose	Cellulose (paper fibres)	10 mg/m3	Not Available	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	silica crystalline - quartz	Silica, Crystalline - Quartz	0.025 mg/m3	Not Available	Not Available	TLV Basis: pulmonary fibrosis; lung cancer
Canada - Alberta Occupational Exposure Limits	silica crystalline - quartz	Silica-Crystalline, Respirable particulate - Quartz	0.025 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	silica crystalline - quartz	Silica - Crystalline# : Quartz (respirable fraction++)	0.05 mg/m3	Not Available	Not Available	T20
Canada - Manitoba Occupational Exposure Limits	silica crystalline - quartz	Not Available	0.025 mg/m3	Not Available	Not Available	TLV® Basis: Pulm fibrosis; lung cancer
Canada - Prince Edward Island Occupational Exposure Limits	silica crystalline - quartz	Silica, crystalline - α-quartz and cristobalite	0.025 mg/m3	Not Available	Not Available	TLV® Basis: Pulm fibrosis; lung cancer
Canada - Ontario Occupational Exposure Limits	silica crystalline - quartz	Silica, Crystalline - Quartz/Tripoli (Respirable fraction)	0.10 mg/m3	Not Available	Not Available	* Denotes a chemical agent listed in Table 1 of Ontario Regulation 490/09 (Designated Substances) made under the Act. See clause 2 (2) (a) of this Regulation. (R) Respirable fraction: means that size fraction of the airborne particulate deposited in the gas-exchange region of the

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
						respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the ACGIH particle size-selective sampling criteria for airborne particulate matter; and (b) has the cut point of 4 µm at 50 per cent collection efficiency.
Canada - Northwest Territories Occupational Exposure Limits	silica crystalline - quartz	Silica - Crystalline#: Quartz (respirable fraction)	0.05 mg/m3	Not Available	Not Available	Schedule R
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	silica crystalline - quartz	Silica - Crystalline, Quartz	0.1 mg/m3	Not Available	Not Available	Not Available
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	isopropanol	Isopropyl alcohol - Skin	400 ppm / 980 mg/m3	1,225 mg/m3 / 500 ppm	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	isopropanol	2-Propanol	200 ppm	400 ppm	Not Available	TLV Basis: eye & upper respiratory tract irritation; central nervous system impairment
Canada - Alberta Occupational Exposure Limits	isopropanol	2-Propanol (Isopropyl alcohol, isopropanol)	200 ppm / 492 mg/m3	984 mg/m3 / 400 ppm	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	isopropanol	Isopropyl alcohol	200 ppm	400 ppm	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	isopropanol	Not Available	200 ppm	400 ppm	Not Available	TLV® Basis: Eye & URT irr; CNS impair; BEI
Canada - British Columbia Occupational Exposure Limits	isopropanol	Isopropanol (Isopropyl alcohol)	200 ppm	400 ppm	Not Available	Not Available
Canada - Prince Edward Island Occupational Exposure Limits	isopropanol	2-Propanol	200 ppm	400 ppm	Not Available	TLV® Basis: Eye & URT irr; CNS impair; BEI
Canada - Northwest Territories Occupational Exposure Limits	isopropanol	Isopropyl alcohol	200 ppm	400 ppm	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	isopropanol	Isopropyl alcohol	400 ppm / 985 mg/m3	1230 mg/m3 / 500 ppm	Not Available	Not Available

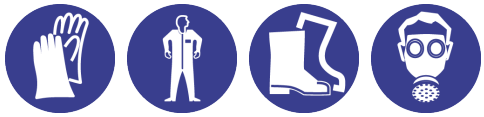
Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

- Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.
- Work should be undertaken in an isolated system such as a 'glove-box' . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.
- Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.
- Open-vessel systems are prohibited.
- Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation.
- Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless

Continued...

	decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system. ▸ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas). ▸ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air. ▸ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed. For large scale or continuous use: ▸ Spark-free, earthed ventilation system, venting directly to the outside and separate from usual ventilation systems ▸ Provide dust collectors with explosion vents
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Continued...

	‣ Wear physical protective gloves, e.g. leather. ‣ Wear safety footwear.
Body protection	See Other protection below
Other protection	‣ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ‣ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ‣ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ‣ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ‣ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ‣ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ‣ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ‣ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

- **Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.**
- **The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).**
- **Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.**
- **Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.**
- **Use approved positive flow mask if significant quantities of dust becomes airborne.**
- **Try to avoid creating dust conditions.**

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	White paste (solid)

Physical state	Solid	**Relative density (Water = 1)**	1.14
Odour	Slight alcohol odor	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	25	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available

Continued...

Flammability	Flammable.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Applicable
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	17.29
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Partly miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	246

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	‣ Unstable in the presence of incompatible materials. ‣ Product is considered stable. ‣ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract. Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	Overexposure to non-ring alcohols causes nervous system symptoms. These include headache, muscle weakness and inco-ordination, giddiness, confusion, delirium and coma. The material has **NOT**been classified as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.
Skin Contact	Causes skin irritation.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.

Masters Pro-Dope	**TOXICITY**	**IRRITATION**
	Not Available	Not Available

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✓
Mutagenicity	✗	**Aspiration Hazard**	✗

SECTION 12 Ecological information

Toxicity

Continued...

Masters Pro-Dope	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available

DO NOTdischarge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Titanium dioxide	HIGH	HIGH
polytetrafluoroethylene	HIGH	HIGH
cellulose	LOW	LOW
propylene glycol monobutyl ether - alpha isomer	LOW	LOW
isopropanol	LOW (Half-life = 14 days)	LOW (Half-life = 3 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
Titanium dioxide	LOW (BCF = 10)
polytetrafluoroethylene	LOW (LogKOW = 1.2142)
cellulose	LOW (LogKOW = -5.1249)
propylene glycol monobutyl ether - alpha isomer	LOW (LogKOW = 0.9842)
isopropanol	LOW (LogKOW = 0.05)

Mobility in soil

Ingredient	Mobility
Titanium dioxide	LOW (KOC = 23.74)
polytetrafluoroethylene	LOW (KOC = 106.8)
cellulose	LOW (KOC = 10)
propylene glycol monobutyl ether - alpha isomer	HIGH (KOC = 1.289)
isopropanol	HIGH (KOC = 1.06)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) ▸ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 Transport information

Labels Required

Continued...

Marine Pollutant	NO

Land transport (TDG)

UN number	3175
UN proper shipping name	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. Isopropanol
Transport hazard class(es)	Class: 4.1 Subrisk: Not Applicable
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions: 16, 56 Explosive Limit and Limited Quantity Index: 1 kg ERAP Index: Not Applicable

Air transport (ICAO-IATA / DGR)

UN number	3175
UN proper shipping name	Solids containing flammable liquid, n.o.s. * Isopropanol
Transport hazard class(es)	ICAO/IATA Class: 4.1 ICAO / IATA Subrisk: Not Applicable ERG Code: 3L
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	Special provisions: A46 Cargo Only Packing Instructions: 448 Cargo Only Maximum Qty / Pack: 50 kg Passenger and Cargo Packing Instructions: 445 Passenger and Cargo Maximum Qty / Pack: 15 kg Passenger and Cargo Limited Quantity Packing Instructions: Y441 Passenger and Cargo Limited Maximum Qty / Pack: 5 kg

Sea transport (IMDG-Code / GGVSee)

UN number	3175
UN proper shipping name	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. Isopropanol
Transport hazard class(es)	IMDG Class: 4.1 IMDG Subrisk: Not Applicable
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	EMS Number: F-A , S-I Special provisions: 216 274 Limited Quantities: 1 kg

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

Continued...

Talc is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans

Kaolin is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
Chemical Footprint Project - Chemicals of High Concern List
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Oxidized Castor Oil is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)

Titanium dioxide is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Calcium silicate is found on the following regulatory lists

Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

polytetrafluoroethylene is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

silica amorphous, fumed is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)

cellulose is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

silica crystalline - quartz is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1 : Carcinogenic to humans

propylene glycol monobutyl ether - alpha isomer is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS

isopropanol is found on the following regulatory lists

Canada Categorization decisions for all DSL substances
Canada Domestic Substances List (DSL)
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

National Inventory Status

National Inventory	Status
Canada - DSL	No (Calcium silicate)

Continued...

National Inventory	Status
Canada - NDSL	No (Talc; Kaolin; Oxidized Castor Oil; Titanium dioxide; Calcium silicate; polytetrafluoroethylene; silica amorphous, fumed; cellulose; silica crystalline - quartz; propylene glycol monobutyl ether - alpha isomer; isopropanol)

SECTION 16 Other information

Revision Date	12/16/2020
Initial Date	11/20/2020

Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

SAFETY DATA SHEET

SECTION I: IDENTIFICATION

Product name: MASTERS® ALL CONDITION SOLDERING PASTE
Product use: Soldering Paste.

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS IDENTIFICATION

Classification of the chemical

Light brownish to white paste. Slight petroleum odour.

Most important hazards:
May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS. Very toxic to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).
Classification:
Skin corrosion/irritation - Category 1C
Eye damage/irritation - Category 1
Hazards Not Otherwise Classified (HNOC) / Health Hazards Not Otherwise Classified (Respiratory Tract)

Label elements

Hazard pictogram(s)

Signal Word
DANGER!

Hazard statement(s)
Causes severe skin burns and eye damage.
Corrosive to the respiratory tract.

Precautionary statement(s)
Do not breathe fumes, mists or vapours.
Wash exposed skin thoroughly after handling.
Wear protective gloves/clothing and eye/face protection.

Immediately call a POISON CENTER or doctor/physician.
If swallowed: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Toxic fumes may be released during a fire. May be mildly corrosive to some metals. May cause irritation and burns to mouth and throat.

Environmental precautions:
Very toxic to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Zinc chloride	Zinc chloride, anhydrous	7646-85-7	**18.97**
Ammonium chloride	Ammonium muriate	12125-02-9	**1.8**

SECTION IV:. FIRST-AID MEASURES

Description of first aid measures

Ingestion : If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. Never give anything by mouth to an unconscious person.

Inhalation : IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Immediately call a POISON CENTER or doctor/physician.

Skin contact : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.

Eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 20 minutes. Protect unharmed eye. Do not rub area of contact. Immediately call a POISON CENTER or doctor/physician.

Most important symptoms and effects, both acute and delayed

: Causes skin burns. Symptoms may include blistering, ulcerations and scarring.
Causes serious eye damage. Symptoms may include stinging, tearing, redness and swelling. May cause irreversible eye damage.
Corrosive to the respiratory tract. May produce irritation, burning, or destruction of tissues in the respiratory tract, characterized by coughing, choking, pain, or shortness of breath.
May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include severe abdominal pain, vomiting, burns and bleeding.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION V: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

: None known.

Special hazards arising from the substance or mixture / Conditions of flammability

: Not considered flammable. However, may burn if exposed to extreme heat and flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Hazardous combustion products

: Carbon oxides; Hydrogen chloride gas; Zinc oxide; Ammonia; Nitrogen oxides (NOx); Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Normal protective clothing (bunker gear) may not be adequate. A full-body encapsulating chemical protective suit may be necessary.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply. Avoid release to the environment.

Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Eliminate all ignition sources. Paste: Use inert, non-combustible absorbents to assist the pick up of material. Scrape up product and place it into a container for disposal.
dusts: Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Keep in properly labelled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

SECTION VII: HANDLING AND STORAGE

Precautions for safe handling

: Use with adequate ventilation. Wear protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe fumes, mists or vapours. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep container tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue and can be dangerous.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. May be mildly corrosive to some metals.

Incompatible materials : Strong bases; Alkali metals (e.g. Sodium; Potassium); Strong acids; Turpentine; Cyanides; Sulfides; Halogenated compounds; Lead and silver salts; Metals

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Zinc chloride	1 mg/m³ (fume)	2 mg/m³ (fume)	1 mg/m³ (fume)	N/Av
Ammonium chloride	10 mg/m³ (fume)	20 mg/m³ (fume)	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Provide adequate ventilation. Local ventilation is recommended if the product is misted or used in a confined space, or if the TLV is exceeded.

Respiratory protection : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with CSA Z94.4-02.

Skin protection : Wear protective gloves/clothing. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection : Wear eye/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. A full face shield may also be necessary.

Other protective equipment : An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe fumes, mists or vapours. Avoid contact with skin, eyes and clothing. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Light brownish to white paste.

Odour : Slight petroleum odour.

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : 35°C (95°F) (Melting point)

Initial boiling point and boiling range

: N/Av

Flash point : 182 - 221°C (360 - 430°F)

Flashpoint (Method) : Tag closed cup

Evaporation rate (BuAe = 1) : N/Av

Flammability (solid, gas) : Not considered flammable.

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : N/Av

Vapour density : N/Av

Relative density / Specific gravity

: 0.87 @ 15.6°C (60°F)

Solubility in water : Insoluble.

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : N/Av

Volatiles (% by weight) : < 1%

Volatile organic Compounds (VOC's)

: 11.7 g/L

Absolute pressure of container

: N/Ap

Flame projection length : N/Ap

Other physical/chemical comments

: No additional information.

SECTION X: STABILITY AND REACTIVITY

Reactivity : Not normally reactive. May be corrosive to metals such as copper and its alloys (e.g. brass, bronze), aluminum, ferrous metals (e.g. cast iron), carbon steel and some stainless steels (e.g. 303, 310, 321, 400 series). Contact with acids may evolve Hydrogen chloride gas. Contact with strong alkalies may evolve ammonia gas.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid : Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Avoid heat and open flame.

Incompatible materials : Strong bases; Alkali metals (e.g. Sodium; Potassium); Strong acids; Turpentine; Cyanides; Sulfides; Halogenated compounds; Lead and silver salts; Metals

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION XI: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Corrosive to the respiratory tract. May produce irritation, burning, or destruction of tissues in the respiratory tract, characterized by coughing, choking, pain, or shortness of breath.

Sign and symptoms ingestion

: May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include severe abdominal pain, vomiting, burns and bleeding.

Sign and symptoms skin : Causes skin burns. Symptoms may include blistering, ulcerations and scarring.

Sign and symptoms eyes : Causes serious eye damage. Symptoms may include stinging, tearing, redness and swelling. May cause irreversible eye damage.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: This product is not expected to cause reproductive or developmental effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : According to the classification criteria of Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause specific target organ toxicity (STOT) through single or repeated exposures.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : Not classified for acute toxicity based on available data. The calculated ATE values for this mixture are:
ATE oral = 5342 mg/kg

See below for individual ingredient acute toxicity data.

Chemical name	LC_{50} (4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Zinc chloride	N/Av	1100 mg/kg	> 2000 mg/kg (No mortality)
Ammonium chloride	N/Av	1220 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards
: None known or reported by the manufacturer.

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information

SECTION XIII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations

SECTION XIV: TRANSPORTATION INFORMATION

Refer to the supplier for Transportation Information

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Information

SECTION XVI: OTHER INFORMATION

Prepared for: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: May 30, 2017

SDS - SAFETY DATA SHEET

SECTION I: PRODUCT IDENTIFICATION

Product name: MASTERS® EPOXY PUTTY
Product use: Adhesive

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS

EMERGENCY OVERVIEW

May cause an allergic skin reaction

GHS Hazard and precautionary statements
WARNING — Skin Sensitization (Category 1)

Precautionary Statements:
Wear protective gloves. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace.

Inhalation: Avoid breathing dust.
Ingestion: No specific data.
Skin contact: Wear protective gloves. Contaminated work clothing should not be allowed out of the workplace.
Eye contact: No specific data.

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Material information:

Name	CAS No.	Weight %
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	1 - 5
Crystalline silica, non-respirable	14808-60-7	0.1 - 1

***Note:** The above weight percentages are represented in ranges as estimates. Due to variation among production batches, component percentages may vary.*

SECTION IV: FIRST AID

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous.
Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Note to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION V: FIREFIGHTING

Suitable extinguishing media:
Use an extinguishing agent suitable for the surrounding fire.

Specific hazards:
No specific fire or explosion hazard.

Special protective actions and equipment for firefighters:
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

	NFPA rating:	HMIS rating:
Health:	**2**	**2**
Flammability:	**0**	**0**
Instability/reactivity:	**0**	**0**
Other:	**N/A**	**N/A**

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal Precautions:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for Containment and Clean up **Large spill:**	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

SECTION VII: HANDLING AND STORAGE

Handling:	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
Storage:	Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

Name	CAS No.	Exposure Limits:
Crystalline silica (non-respirable)	14808-60-7	**OSHA PEL Z3 (United States, 9/2005) Notes: 250/(%SiO2+5)** TWA: 250 MPPCF / (%SiO2+5) 8 hours. Form: Respirable **OSHA PEL Z3 (United States, 9/2005) Notes: 10/(SiO2+2)** TWA: mg/m^3 / (%SiO2+2) 8 hours. Form: Respirable **ACGIH TLV (United States, 3/2012)** TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction **NIOSH REL (United States, 1/2013)** TWA: 0.05 mg/m³ 10 hours. Form: respirable dust **OSHA PEL Z3 (United States, 9/2005) Notes: 30/(%SiO2+2)** TWA: 30 mg/m^3 / (%SiO2+2) 8 hours. Form: Total dust.

Engineering measures: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION (CONT'D)

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin and body protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION XI: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue/White putty
Physical state (solid/liquid/gas):	Solid
Substance type (pure/mixture):	Mixture
Color:	Blue/White
Odor:	Sulfurous, pungent
Molecular weight:	Not Available
pH:	Not Available
Boiling point/range (5-95%):	Not Available
Melting point/range:	Not Available
Decomposition temperature:	>392°F (200°C)
Specific gravity:	Not Available
Vapor density:	Not Available
Vapor pressure:	Not Available
Evaporation rate (Butyl acetate= 1):	Not Available
Flash point, method used:	Product does not sustain combustion
Water solubility:	Not Available
VOC Content:	Not Available
Auto-ignition temperature:	Not Available
Flammable limits in air — lower (%):	Not Available
Flammable limits in air — upper (%):	Not Available

SECTION X: STABILITY AND REACTIVITY

Reactivity:	No data available.
Stability:	Stable under recommended storage conditions.
Possibly hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	No specific data available.
Incompatible Materials:	No specific data available.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Polymerization:	Will not occur.

SECTION XI: TOXICOLOGICAL INFORMATION

Product information:

Name	CAS No.	Inhalation:	Dermal:	Or
2,4,6-tris (dimethylaminomethyl) phenol	90-72-2	N/A	LD_{50} (Rat) 1280 mg/kg	LD_{50} (Rat) 1200 mg/kg

Chronic toxicity: No specific data
Sensitization: No specific data.

Carcinogenicity:

Name	CAS No.	OSHA	IA	NTP
2,4,6-tris (dimethylaminomethyl) phenol	90-72-2	N/A	1	Known to be a human cacinogen

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information

SECTION XIII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations.

SECTION XIV: TRANSPORT INFORMATION

Refer to the supplier for Transport Information

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Information

SECTION XVI: OTHER INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: **May 30, 2017**

Material Name: HERCULES MULTI-PURPOSE MILKY, MEDIUM BODY

* * * Section 1 - Product and Company Identification * * *

MSDS #96

Part Numbers: 60703, 60713, 60715, 60720, 60725

Manufacturer Information

HCC Holdings, Inc.
An Oatey Affiliate
4700 West 160th Street
Cleveland, OH 44135

Phone: 216-267-7100

For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1- 703-527-3887.

* * * Section 2 - Hazards Identification * * *

GHS Classification:

Flammable Liquids - Category 2
Acute Toxicity Oral - Category 4
Acute Toxicity Dermal - Category 4
Acute Toxicity Inhalation - Category 4
Eye Damage/Irritation - Category 2A
Carcinogenicity - Category 2
Specific Target Organ Toxicity Single Exposure - Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Contains a chemical classified by the US EPA as a suspected possible carcinogen.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames and hot surfaces. - No smoking.
Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors.
Use only outdoors or in a well-ventilated area.

Response

If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use dry chemical, CO2, or foam to extinguish fire.

Storage

Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
109-99-9	Tetrahydrofuran	30-40
78-93-3	Methyl ethyl ketone	20-30
68648-82-8	Ethene, chloro-, homopolymer, chlorinated	10-15
108-94-1	Cyclohexanone	10-15
67-64-1	Acetone	5-15

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

First Aid: Skin

Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with hand cleaner or baby oil.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

First Aid: Inhalation

If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Highly flammable liquid and vapor. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

Hazardous Combustion Products

Carbon Dioxide and Carbon Monoxide are formed. Irritating peroxide fumes formed when heated to decomposition.

Extinguishing Media

Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Stop leak if it can be done without risk.

Materials and Methods for Clean-Up

Remove all sources of ignition and ventilate area. Soak up spill with an inert absorbent such as sand, earth or other noncombusting material. Put absorbent material in covered, labeled metal containers.

Emergency Measures

Isolate area. Keep unnecessary personnel away.

Personal Precautions and Protective Equipment

Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high.

Environmental Precautions

Prevent liquid from entering watercourses, sewers and natural waterways.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. "Empty" containers retain product residue and can be hazardous. Follow all SDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

Storage Procedures

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Incompatibilities

Strong oxidizing materials, Lithium Aluminum Hydride, Sodium Aluminum Hydroxide & Sodium & Potassium Hydroxides.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 50 ppm TWA
100 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
NIOSH: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

Cyclohexanone (108-94-1)

ACGIH: 20 ppm TWA
50 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 50 ppm TWA; 200 mg/m3 TWA
NIOSH: 25 ppm TWA; 100 mg/m3 TWA
Potential for dermal absorption

CPVC (Chloroethylene, polymer) (68648-82-8)

ACGIH: 1 mg/m3 TWA (respirable fraction)

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 1000 ppm TWA; 2400 mg/m3 TWA
NIOSH: 250 ppm TWA; 590 mg/m3 TWA

Engineering Measures

Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Personal Protective Equipment: Respiratory

For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Personal Protective Equipment: Hands

Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Personal Protective Equipment: Eyes

Safety glasses with side shields or safety goggles.

Personal Protective Equipment: Skin and Body

No additional protective equipment needed.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Milky clear	**Odor:**	Acetone-like
Physical State:	Liquid	**pH:**	NA
Vapor Pressure:	400 @ 104° F (Based on Acetone)	**Vapor Density:**	2.0 to 2.5
Boiling Point:	133°F (Based on Acetone)	**Melting Point:**	NA
Solubility (H2O):	60-85%	**Specific Gravity:**	0.923 +/- 0.03
Evaporation Rate:	7-11	**VOC:**	490 g/L
Octanol/H2O Coeff.:	ND	**Flash Point:**	6°F
Flash Point Method:	TCC	**Upper Flammability Limit (UFL):**	11.8
Lower Flammability Limit (LFL):	2.0	**Burning Rate:**	ND
Auto Ignition:	ND		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid heat, sparks, flames and other sources of ignition.

Incompatible Products

Strong oxidizing materials, Lithium Aluminum Hydride, Sodium Aluminum Hydroxide & Sodium & Potassium Hydroxides.

Hazardous Decomposition Products

Carbon Dioxide and Carbon Monoxide are formed. Irritating peroxide fumes formed when heated to decomposition.

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

Component Analysis - LD50/LC50

Tetrahydrofuran (109-99-9)
Inhalation LC50 Rat 53.9 mg/L 4 h; Inhalation LC50 Rat 180 mg/L 1 h; Oral LD50 Rat 1650 mg/kg

Methyl ethyl ketone (78-93-3)
Inhalation LC50 Mouse 32 g/m3 4 h; Oral LD50 Rat 2737 mg/kg; Dermal LD50 Rabbit 6480 mg/kg

Cyclohexanone (108-94-1)
Inhalation LC50 Rat 10.7 mg/L 4 h; Inhalation LC50 Rat 8000 ppm 4 h; Oral LD50 Rat 800 mg/kg; Dermal LD50 Rabbit 948 mg/kg

Acetone (67-64-1)
Oral LD50 Rat 5800 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Potential Health Effects: Ingestion

Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Potential Health Effects: Inhalation

Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Carcinogenicity

A: General Product Information

In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

B: Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Ethene, chloro-, homopolymer, chlorinated (68648-82-8)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Reproductive Toxicity

Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Specified Target Organ General Toxicity: Single Exposure

May cause respiratory irritation. Inhalation of high concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

This product is not expected to be toxic to aquatic organisms.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	1970-2360 mg/L [flow-through]	
96 Hr LC50 Pimephales promelas	2700-3600 mg/L [static]	
24 Hr EC50 Daphnia magna	5930 mg/L	

Methyl ethyl ketone (78-93-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	3130-3320 mg/L [flow-through]	
48 Hr EC50 Daphnia magna	>520 mg/L	
48 Hr EC50 Daphnia magna	5091 mg/L	
48 Hr EC50 Daphnia magna	4025 - 6440 mg/L [Static]	

Cyclohexanone (108-94-1)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	481-578 mg/L [flow-through]	
96 Hr LC50 Pimephales promelas	8.9 mg/L	
96 Hr EC50 Chlorella vulgaris	20 mg/L	
24 Hr EC50 Daphnia magna	800 mg/L	

Acetone (67-64-1)

Test & Species		Conditions
96 Hr LC50 Oncorhynchus mykiss	4.74 - 6.33 mL/L	
96 Hr LC50 Pimephales promelas	6210 - 8120 mg/L [static]	
96 Hr LC50 Lepomis macrochirus	8300 mg/L	
48 Hr EC50 Daphnia magna	10294 - 17704 mg/L [Static]	
48 Hr EC50 Daphnia magna	12600 - 12700 mg/L	

Persistence/Degradability

No information available for the product.

Bioaccumulation

No information available for the product.

Mobility in Soil

No information available for the product.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

DOT Information

For Greater than 1 liter (0.3 gal):
Shipping Name: Flammable Liquid, n.o.s (Tetrahydrofuran, Methyl Ethyl Ketone)
UN #: 1993 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):
Shipping Name: Consumer Commodity, ORM-D

IMDG Information

For Greater than 1 liter (0.3 gal):
Shipping Name: Flammable Liquid, n.o.s (Tetrahydrofuran, Methyl Ethyl Ketone)
UN #: 1993 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): Flammable Liquid

For Less than 1 liter (0.3 gal):
Shipping Name: Flammable Liquid, n.o.s (Tetrahydrofuran, Methyl Ethyl Ketone)
UN #: 1993 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): None (Limited Quantities are expected from labeling)

* * * Section 15 - Regulatory Information * * *

Regulatory Information

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Methyl ethyl ketone (78-93-3)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Tetrahydrofuran	109-99-9	Yes	Yes	Yes	Yes	Yes	No
Methyl ethyl ketone	78-93-3	Yes	Yes	Yes	Yes	Yes	No
Cyclohexanone	108-94-1	Yes	Yes	Yes	Yes	Yes	No
Ethene, chloro-, homopolymer, chlorinated	68648-82-8	No	No	No	Yes	No	No
Acetone	67-64-1	Yes	Yes	Yes	Yes	Yes	No

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Tetrahydrofuran	109-99-9	1 %
Methyl ethyl ketone	78-93-3	1 %
Cyclohexanone	108-94-1	0.1 %
Acetone	67-64-1	1 %

Additional Regulatory Information

A: General Product Information

This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. The use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 will minimize exposure to these chemicals.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Tetrahydrofuran	109-99-9	Yes	DSL	EINECS
Methyl ethyl ketone	78-93-3	Yes	DSL	EINECS
Cyclohexanone	108-94-1	Yes	DSL	EINECS
Ethene, chloro-, homopolymer, chlorinated	68648-82-8	Yes	DSL	ELINCS
Acetone	67-64-1	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None

HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

End of Sheet

SAFETY DATA SHEET

1. Identification

Product identifier **Oatey Silver Lead Free and Safe-Flo® Solder**

Other means of identification

SDS number 1601E

Synonyms Part Numbers: 22027, 23000, 23001, 23002, 29030, 29024, 29025, 53061, 53180, 53062, 53188, 53064, 53195, 50683, 50684, 50691, 50962, 53013, 53186

Recommended use Joining Copper Pipes.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Very toxic to aquatic life.

Precautionary statement

Prevention Avoid release to the environment.

Response Collect spillage.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Tin	7440-31-5	60-100
Bismuth	7440-69-9	1-5
Copper	7440-50-8	1-5
Silver	7440-22-4	1-5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Dry sand. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Use water spray to cool unopened containers.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Stop the flow of material, if this is without risk. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid prolonged exposure. Avoid breathing dust/fume/gas/mist/vapors/spray. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	PEL	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Silver (CAS 7440-22-4)	PEL	0.01 mg/m3	
Tin (CAS 7440-31-5)	PEL	2 mg/m3	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	Dust and fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
Silver (CAS 7440-22-4)	TWA	0.01 mg/m3	Dust.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance Solid wire.

Physical state Solid.

Form Solid.

Color Silver.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point 415 - 455 °F (212.78 - 235 °C)

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 9 - 11

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Copper (CAS 7440-50-8)	LISTED
Silver (CAS 7440-22-4)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Copper	7440-50-8	1-5
Silver	7440-22-4	1-5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

US. New Jersey Worker and Community Right-to-Know Act

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

US. Rhode Island RTK

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 30-July-2014

Revision date 10-December-2014

Version # 02

HMIS® ratings Health: 0
Flammability: 0
Physical hazard: 0

Disclaimer Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

SAFETY DATA SHEET

1. Identification

Product identifier **Regular Clear Advanced PVC Cement**

Other means of identification

Product code 1107E

Synonyms Part Numbers: 30881, 31925, 31926, 31927, 31928, 31929, 31958, 31959, 31960, 31961

Recommended use Joining PVC Pipes

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May form explosive peroxides. Contains a chemical classified by the US EPA as a suspected possible carcinogen.

Supplemental information

Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Methyl ethyl ketone	78-93-3	30-45
Cyclohexanone	108-94-1	10-25
Furan, Tetrahydro-	109-99-9	10-25
Acetone	67-64-1	5-15
Polyvinyl chloride	9002-86-2	5-15

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Polyvinyl chloride (CAS 9002-86-2)	STEL	5 ppm
	TWA	1 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Acetone (CAS 67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m3	
		50 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	PEL	590 mg/m3	
		200 ppm	
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m3	
		200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Acetone (CAS 67-64-1)	STEL	750 ppm	
	TWA	500 ppm	
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	
Furan, Tetrahydro- (CAS 109-99-9)	STEL	100 ppm	
	TWA	50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Polyvinyl chloride (CAS 9002-86-2)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3
		250 ppm
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3
		25 ppm
Furan, Tetrahydro- (CAS 109-99-9)	STEL	735 mg/m3
		250 ppm
	TWA	590 mg/m3
		200 ppm
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3
		300 ppm
	TWA	590 mg/m3
		200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Acetone (CAS 67-64-1)	50 mg/l	Acetone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Furan, Tetrahydro- (CAS 109-99-9)	2 mg/l	Tetrahydrofuran	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1) Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.
Furan, Tetrahydro- (CAS 109-99-9) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1) Can be absorbed through the skin.

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Face shield is recommended. Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Translucent liquid.
Color	Clear.
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	151 °F (66.11 °C)
Flash point	-4.0 °F (-20.0 °C)
Evaporation rate	5.5 - 8
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.8
Flammability limit - upper (%)	11.8
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	145 mm Hg @ 20 C
Vapor density	2.5
Relative density	0.9 +/- 0.02
Solubility(ies)	
Solubility (water)	Negligible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	80 - 500 cP
Other information	
VOC (Weight %)	488 g/l SCAQMD 1168/M316A

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May be fatal if swallowed and enters airways. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Harmful if swallowed. Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects. May cause respiratory irritation.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Rabbit	20 ml/kg
Inhalation		
LC50	Rat	50 mg/l, 8 Hours
Oral		
LD50	Rat	5800 mg/kg
Cyclohexanone (CAS 108-94-1)		
Acute		
Dermal		
LD50	Rabbit	948 mg/kg
Inhalation		
LC50	Rat	8000 ppm, 4 hours
Oral		
LD50	Rat	1540 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 2012 USEPA Integrated Risk Information System (IRIS) reviewed a two species inhalation lifetime study on THF conducted by NTP (1998). Male rats developed renal tumors and female mice developed liver tumors while neither the female rats nor the male mice showed similar results. Because the carcinogenic mechanisms could not be identified clearly in either species for either tumor, the EPA determined that the male rat and female mouse findings are relevant to the assessment of carcinogenic potential in humans. Therefore, the IRIS review concludes that these data in aggregate indicate that there is "suggestive evidence of carcinogenic potential" following exposure to THF by all routes of exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.
Polyvinyl chloride (CAS 9002-86-2)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Narcotic effects. May cause drowsiness and dizziness. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Cyclohexanone (CAS 108-94-1)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	481 - 578 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone (CAS 67-64-1)	-0.24
Cyclohexanone (CAS 108-94-1)	0.81
Furan, Tetrahydro- (CAS 109-99-9)	0.46
Methyl ethyl ketone (CAS 78-93-3)	0.29

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Methyl ethyl ketone RQ = 12788 LBS, Acetone RQ = 50505 LBS)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone, Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Polyvinyl chloride (CAS 9002-86-2)	Cancer
	Central nervous system
	Liver
	Blood
	Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetone (CAS 67-64-1)	LISTED
Cyclohexanone (CAS 108-94-1)	LISTED
Furan, Tetrahydro- (CAS 109-99-9)	LISTED
Methyl ethyl ketone (CAS 78-93-3)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Acetone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1)	35 %WV
Methyl ethyl ketone (CAS 78-93-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Methyl ethyl ketone (CAS 78-93-3)	6714

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)
Polyvinyl chloride (CAS 9002-86-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Cyclohexanone (CAS 108-94-1)
Furan, Tetrahydro- (CAS 109-99-9)
Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-28-2015

Revision date -

Version # 01

HMIS® ratings
Health: 2
Flammability: 3
Physical hazard: 0

NFPA ratings

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Oatey Co. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

SDS - SAFETY DATA SHEET

SECTION I: PRODUCT IDENTIFICATION

Product name: MASTERS® CUTTING OIL
Product use: Thread cutting lubricant.

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS IDENTIFICATION

Classification of the substance or mixture

In accordance with 29 CFR 1910.1200 OSHA HCS 2012 and the Canadian Hazardous Products Regulations WHIMIS 2015

Not classified as hazardous

Label elements

Signal word None

Hazard symbol None

Hazard statements This product does not meet the criteria for classification as a hazardous mixture

Precautionary statements

Prevention ▪ Not applicable

Response ▪ Not applicable

Disposal ▪ Not applicable

Storage ▪ Not applicable

Hazards not otherwise classified ▪ Not applicable

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Substances ▪ Mixture

Mixtures

Hazardous Components

Chemical Name	%(Wt.)	CAS #
None		

SECTION IV: FIRST AID MEASURES

Description of first aid measures

Inhalation
- Move victim to fresh air if adverse effects are observed.

Skin
- IF ON SKIN: Wash skin with soap and water. Remove contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.

Eye
- IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion
- Do NOT induce vomiting. Seek medical attention.

Most important symptoms and effects

Acute
- Direct contact with product concentrate may cause eye irritation

Delayed
- Prolonged/repeated exposure may cause mild skin irritation in susceptible individuals.

Indication of any immediate medical attention and special treatment needed

Note to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION V: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media
- Regular foam, carbon dioxide, dry chemical.

Unsuitable Extinguishing Media
- Avoid the use of water jet, as this may spread the fire.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- No unusual hazard noted. Treat as an oil fire.

Hazardous Combustion Products
- Smoke, soot, fumes or vapors, oxides of carbon and sulphur

Special Protective Equipment and Precautions for Firefighters
- Structural firefighters' protective clothing will only provide limited protection. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Wear positive pressure self-contained breathing apparatus (SCBA). Water spray may be used to cool containers exposed to fire.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal Precautions
- Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not touch or walk through spilled material.

Environmental precautions
- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Recover free liquid for recycle or disposal. Add absorbent to spill area. LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

SECTION VII: HANDLING AND STORAGE

Precautions for safe handling

Handling

- Do not mix with incompatible materials. Do not breathe oil mist.

  Empty container contains product residue which may exhibit hazards of product.

Conditions for safe storage, including any incompatibilities

Storage

- Store in a dry, well ventilated place. Keep container tightly closed when not in use.

  Keep away from open flame.

Incompatible Materials

- Strong oxidizing agents.

General Industrial Hygiene Considerations

- Handle in accordance with good industrial hygiene and safety practice.

  Wash thoroughly with soap and water after handling and before eating or drinking. Safety shower and eye wash should be available close to work station.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste.

  Avoid release to the environment.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls

PEL/TLV

Ingredient	OSHA (PEL)	ACGIH (TLV)	Other
Oil Mist, Mineral	5mg/M3	5mg/M3	STEL 10mg/M3

Engineering Measures/Controls

- Use adequate mechanical (general) ventilation or local exhaust as needed to control concentration of airborne contaminants below applicable exposure limit values.

Personal Protective Equipment

Pictograms

Respiratory

- Not necessary under conditions of normal use. In case of insufficient ventilation, wear suitable respiratory equipment if exposure limits are exceeded.

Eye/Face

- Wear safety goggles.

Hands

- Wear protective gloves- neoprene, butyl or nitrile rubber with cuffs.

Skin/Body

- Where extensive dermal exposure may be expected, either a chemical suit or chemical apron will be needed.

SECTION XI: PHYSICAL AND CHEMICAL PROPERTIES

Information on physical and chemical properties

Appearance	Clear golden yellow or amber liquid
Odor	Petroleum
Odor Threshold	Not Determined
pH	None
Melting Point/Freezing Point	Not Determined
Boiling Point Range	Not determined
Flash Point	> 180°C (356°F) Cleveland Open Cup
Evaporation Rate	Negligible
Flammability Limits	Not determined
Vapor Pressure	< 0.1mm Hg @ 20°C (68°F)
Vapor Density (Air=1)	> 1.0
Specific Gravity/Density	0.89
Solubilities	Insoluble in water
Octanol/Water Partition coefficient	Not Determined
Auto ignition temperature	Not determined
Decomposition temperature	Not Determined
Viscosity	46 cSt @ 40°C

SECTION X: STABILITY AND REACTIVITY

Reactivity	▪ No dangerous reaction known under conditions of normal use.
Chemical stability	▪ Stable under normal temperatures and pressures.
Possibility of hazardous reaction	▪ Not determined
Conditions to avoid	▪ Not determined
Incompatible materials	▪ Do not mix with strong oxidants.
Hazardous decomposition products	▪ None known under normal use.

SECTION XI: TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure; symptoms; and acute, delayed and chronic effects

Inhalation
- Overexposure to mists or vapors may irritate respiratory tract. May be fatal if swallowed and enters airways.

Ingestion
- Ingestion of concentrate may cause gastrointestinal irritation. Do not induce vomiting which may increase the risk of product aspiration.

Eye
- Direct contact with concentrate may cause eye irritation based on component information.

Skin corrosion/irritation
- Prolonged/repeated exposure to concentrate may cause mild skin irritation in some individuals.

Numerical measures of toxicity

Acute toxicity	Not classified
Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

Carcinogenicity
- Not listed in NTP, OSHA, or IARC monographs.

Additional Information

- Practical experience has not demonstrated any adverse effects with normal use dilutions of this product.
- Contains petroleum oil, which if misted in excess at exposure limits may cause respiratory irritation, coughing, and extreme overexposure may cause oil pneumonitis.

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information

SECTION XIII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations.

SECTION XIV: TRANSPORT INFORMATION

Refer to the supplier for Transport Information

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Information

SECTION XVI: OTHER INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: May 30, 2017

SDS - SAFETY DATA SHEET

SECTION I: IDENTIFICATION

Product name: MASTERS® METALLIC COMPOUND™
Product use: Pipe thread and gasket sealant.

Supplier name and address:
G.F. THOMPSON CO. LTD.
620 Steven Court, Unit 11
Newmarket, Ontario
L3Y 6Z2

Manufacturer name and address:
Refer to supplier.

Emergency Tel:
Mon – Fri, 7:30 am to 5:00 pm EST
905-898-2557
800-499-3673 (toll free)
24 hr Emergency Tel:
905-252-6219 or 647-448-2050

SECTION II: HAZARDS IDENTIFICATION

Classification of the chemical

Medium, grey paste. Alcohol odour.

Most important hazards:
Combustible liquid. May be ignited by open flame.
Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.
Very toxic to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).
Classification:
- Flammable liquid – Category 4
- Germ cell mutagenicity - Category 2
- Carcinogenicity - Category 1B
- Reproductive toxicity - Category 1A
- Specific target organ toxicity, repeated exposure - Category 1

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

Combustible liquid.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
Do not breathe dust, fume or vapor.
Wash exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical advice/attention.
In case of fire: Use carbon dioxide, dry chemical or foam to extinguish.

Store in a well-ventilated place.
Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Toxic fumes, gases or vapours may evolve on burning. May be mildly irritating to skin, eyes and respiratory system. Inhalation of fumes may result in metal fume fever, a flu-like illness. May cause gastrointestinal irritation.

Environmental precautions:
Very toxic to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Lead	Lead, elemental	7439-92-1	**80.67**
n-Butyl alcohol	n-Butanol 1-Hydroxybutane	71-36-3	**1.19**

SECTION IV: FIRST-AID MEASURES

Description of first aid measures

Ingestion : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing is irregular or stopped, administer artificial respiration. IF exposed or concerned: Get medical advice/attention.

Skin contact : For skin contact, wash with soap and water while removing contaminated clothing. IF exposed or concerned: Get medical advice/attention. Launder contaminated clothing before reuse, or discard.

Eye contact : Rinse immediately with plenty of water, also under the eyelids. IF exposed or concerned: Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

: Suspected of causing genetic defects.
May cause cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
May damage fertility or the unborn child. Effects of excessive exposures may include: Deformity; Delayed development; Functional disorders in fetus; Sterility; Reduced fertility; Menstruation disorders.
Causes damage to organs through prolonged or repeated exposure. Lead accumulates in body tissues and prolonged overexposure to even low levels may eventually result in lead toxicity syndrome which may result in permanent damage or death. Lead poisoning is characterized by a metallic taste in the mouth, loss of appetite, indigestion, nausea, vomiting, constipation, abdominal cramps, disturbance of rest and sleep, and weakness. Lead may damage kidney function, the blood forming system and the reproductive system.
May be mildly irritating to skin, eyes and respiratory system. May cause coughing and breathing difficulties. Exposure may cause temporary irritation, redness or discomfort.
Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION V: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use water fog or fine spray, foams, carbon dioxide or dry chemical.

Unsuitable extinguishing media

: Do not use water jet, as this may spread burning material.

Special hazards arising from the substance or mixture / Conditions of flammability

: Combustible liquid. May be ignited by open flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes, gases or vapours may evolve on burning.

Hazardous combustion products

: Metal oxides; Carbon oxides; Aldehydes; Acids; unburned alcohols; Other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Use water spray to cool unopened containers. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate personal protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent product from entering drains, sewers, waterways and soil. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up

: Ventilate the area. Prevent further leakage or spillage if safe to do so. Eliminate all ignition sources. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labeled containers. Do not use combustible absorbents, such as sawdust. Contaminated absorbent material may pose the same hazards as the spilled product. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

SECTION VII: HANDLING AND STORAGE

Precautions for safe handling

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Conditions for safe storage : Store in a cool, well-ventilated area. Inspect periodically for damage or leaks. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store locked up.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Lead	0.05 mg/m³	N/Av	50 µg/m3 (as Pb) (final rule limit)	N/Av
n-Butyl alcohol	20 ppm	N/Av	100 ppm (300 mg/m³)	N/Av

Exposure controls

Ventilation and engineering measures

: Use with adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection : Wear protective gloves/clothing. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear resistant clothing and boots.

Eye / face protection : Wear eye/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. A full face shield may also be necessary.

Other protective equipment : Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands and face before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Medium, grey paste.
Odour : Alcohol odour.
Odour threshold : N/Av
pH : N/Av
Melting/Freezing point : 65.6 - 187.8°C (150 - 370°F) (emulsion range)

Initial boiling point and boiling range

: > 117.7°C (244°F) (based on ingredients)

Flash point : 63°C (145.4°F)
Flashpoint (Method) : closed cup
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : N/Av
Vapour density : N/Av
Relative density / Specific gravity

: N/Av

Solubility in water : Insoluble.
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av
Decomposition temperature : N/Av
Viscosity : N/Av
Volatiles (% by weight) : 1.6%
Volatile organic Compounds (VOC's)

: 54.4 g/L

Absolute pressure of container

: N/Ap

Flame projection length : N/Ap
Other physical/chemical comments

: No additional information.

SECTION X: STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid : Do not use in areas without adequate ventilation. Avoid contact with incompatible materials. Avoid heat and open flame.
Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases
Hazardous decomposition products

: None known, refer to hazardous combustion products in section 5.

SECTION XI: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.
Contains lead. Inhalation of lead fumes, mists or vapours may cause cumulative effects, which develop slowly over time and resemble chronic overexposure. Symptoms of overexposure to lead may include nausea, headache, fatigue, cramps, vomiting, diarrhea, constipation, confusion, convulsions, anemia and muscular weakness.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may cause symptoms similar to inhalation.

Sign and symptoms skin : Direct skin contact may result in little or no irritation. Direct skin contact may cause temporary redness. Can be absorbed through open wounds or cuts, causing lead poisoning (effects similar to those listed for Inhalation).

Sign and symptoms eyes : Direct eye contact may cause slight or mild, transient irritation. Direct eye contact may cause temporary redness.

Potential Chronic Health Effects

: Pneumoconiosis, or “dusty lung” disease, may result from chronic exposure to any dust. Repeated or prolonged inhalation of fine dusts may cause an increase in mucous production.
This product contains a lead and/or lead compounds. Overexposure to lead dust and fumes adversely affects blood and blood forming tissues, kidneys, liver and the central/peripheral nervous systems and male/female reproductive organs.

Mutagenicity : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Germ cell mutagenicity - Category 2. Suspected of causing genetic defects.
Contains: lead compounds.
Lead is known to cause mutations in both non-reproductive (somatic) cells and reproductive (germ) cells.

Carcinogenicity : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Carcinogenicity - Category 1A. May cause cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
Contains: lead compounds.
Lead is classified as possibly carcinogenic by IARC (Group 2A), the ACGIH (Category A3), the NTP (reasonably anticipated) and OSHA.

Reproductive effects & Teratogenicity

: This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Reproductive toxicant: Category 1A. May damage fertility or the unborn child. Effects of excessive exposures may include: Deformity; Delayed development; Functional disorders in fetus; Sterility; Reduced fertility; Menstruation disorders.
Contains: lead compounds.
Lead compounds are known to cause certain reproductive effects in both males and females. Lead compounds are known to cause embryotoxicity.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Specific target organ toxicity, repeated exposure - Category 1. Causes damage to organs through prolonged or repeated exposure.
Contains: lead and lead compounds.
Lead accumulates in body tissues and prolonged overexposure to even low levels may eventually result in lead toxicity syndrome which may result in permanent damage or death. Lead poisoning is characterized by a metallic taste in the mouth, loss of appetite, indigestion, nausea, vomiting, constipation, abdominal cramps, disturbance of rest and sleep, and weakness. Lead may damage kidney function, the blood forming system and the reproductive system.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : No data is available on the product itself. The calculated ATE values for this mixture are:
ATE oral = 66,387 mg/kg
ATE dermal = 285,882 mg/kg
ATE inhalation (vapours) = 2042 mg/L/4H

See below for individual ingredient acute toxicity data.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Lead	> 5.05 mg/L (dust) (No mortality) (Read-across)	> 2000 mg/kg (No mortality) (Read-across)	> 2000 mg/kg (No mortality) (Read-across)
n-Butyl alcohol	8000 ppm (24.3 mg/L) (vapour)	790 - 4360 mg/kg	3402 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION XII: ECOLOGICAL INFORMATION

Refer to the supplier for Ecological Information

SECTION XII: DISPOSAL CONSIDERATIONS

Refer to the supplier for Disposal Considerations

SECTION XIV: TRANSPORTATION INFORMATION

Refer to the supplier for Transportation Information

SECTION XV: REGULATORY INFORMATION

Refer to the supplier for Regulatory Informations

SECTION XV1: OTHER INFORMATION

Prepared by: G. F. Thompson Co. Ltd
Telephone No.: 905-898-2557
Preparation date: **May 30, 2017**

SAFETY DATA SHEET

PRODUCT: PTFE Thread Seal Tape Revision Date 12/1/14

Section 1: Chemical Product and Company Identification

Manufacturer

AA Thread Seal Tape, Inc.
1275 Kyle ct.
Wauconda, IL 60084
Telephone Number: 800-537-7139

Product Identifier: Thread Tape PTFE Tape
Product Description: PTFE Tape
Product Use: For use on threaded joints of pipe (not exceeding 4" pipe size) in assembles handling gasoline, petroleum oils, propane, butane, naptha, benzene Natural gas and LP-gas in vapor state (temperatures of -65F to 700F, pressure not over 300 psi). A minimum of three full wraps is required for pipe up to 1"

Section 2: Hazard Identification

HMIS HAZARD IDENTIFICATION
Health 1 Flammability 1 Reactivity 0

EMERGENCY OVERVIEW:
Physical Hazards: May become slippery under foot
Acute Health Effects: No known toxicity below 500F
Chronic Health Effects: No chronic health effects are expected

Section 3: Information on Ingredients

Contains: Polytetrafluoroethylene CAS # 9002-84-0
Polytetrafluoroethylene can emit toxic vapors at temperatures exceeding 700F, See Section 5 for additional information
Contains 99.5% pure Virgin PTFE

Section 4: First Aid Measures

INHALATION: Not expected to become a significant inhalation hazard under normal conditions of use.
INGESTION: If ingested this product is not expected to cause an acute reactions. Give two glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person.
EYES: Not expected to come in contact with eyes. In the unlikely event of eye exposure no effects are expected other than normal irritation produced by foreign body in eye. Flush with water. Lasting irritation see a physician.
SKIN: Skin contact may in isolated cases cause allergic reaction common with most other materials. Wash well soap and water. If irritation persists see physician.

Section 5: Fire Fighting Measures

Extinguishing Media: Foam (Aqueous Film Forming Foam), dry chemical, carbon dioxide.

Special Precautions: This compound will not burn unless its pre-heated. Water fog may be used to cool the containers, however frothing may occur if water is sprayed directly into burning containers. Do not enter fire area without proper protection.

Hazardous Combustion Products: The thermal decomposition products are highly dependant upon the combustion conditions. Noxious or toxic fumes may be generated, some of which may be toxic or irritating. Polytetrafluoroethylene can eemit toxic fumes when heated to temperatures exceeding 700F. The max operating temperature for this compound is around 500F. At these temps PTFE does not undergo any thermal degradetion and is not hazardous.

Flash Point: Not established

Lower Flammable Limit: Not established

Upper Flammable Limit: Not established

Autoignition Temperature: Not established

Section 6: Accidental Release Measures

Spills cannot occur. Dispose of any excess material in safe manner. Incineration is to be avoided

Section 7: Handling and Storage

Handling: Avoid contact with the skin and eyes. Use good industrial hygiene practices. Keep containers closed. Wash hands after using product and before eating, drinking, smoking, or using toilet facilities. For opeeration at ambient temps of -65F to 700F and pressure up to 300 psi.

Storage: Store in a dry place away from moisture, excessive heat and sources of ignition at ambient air temperatures of -65F to 700F and preassure up to 300 psi. Avoid storage near food to prevent food contamination.

Section 8: Exposure Controls/Personal Protection

Ventilation Requirements: In confined areas local and general ventilation should be provided. Ventilation systems must be designated accorfing to approved engineering standards.

Personal Protection:

Eye: Wearing of protective glasses is recommended when handling any chemicals.

Gloves: Only in rare case where allergies are apparent are gloves necessary.

Respiratory Provide adequate ventilation in workplace.

Other: Eating and smoking should be prohibited in areas where product is handled Nothing replaces good personal hygiene. Coveralls or other full body clothing shall be worn and properly laundered after use. Workers should wash hands, face, neck and arms before eating, drinking or smoking.

Material Safty Data Sheet Continued

Section 9: Physical and Chemical Properties

Physical State:	Tape
Odor and Appearance:	Odorless
Lowest Boiling point:	Does not apply
Vapor Pressure:	Not established
Vapor Density	Not established
Water Solubility:	Insoluble
% Organic Volatiles:	0.0% w/w
pH:	N.A.

Section 10: Stability and Reactivity

Stability:	Stable under normal conditions.
Reactivity:	Unknown

Section 11: Toxicological Information

Exposure limites: The limits reported in Section 2 of this document refer to other physical forms of the ingredients present in this product. Limits for the formulated product have not been determined.

None of the components of this product have been reported as carcinogenic by NTP, OSHA or IARC.

Section 12: Ecological Information

General: No special procedures

Section 13: Disposal Information

Waste materials must be disposed of in accordance with your municpal, state, provincial and federal regulations. Contact the proper authorities for specific instructions. Avoid incineration.

Section 14: Transport Information

DOT Hazard Class:	Not regulated
Proper Shipping Name:	Not regulated
Identification Number:	Not regulated

Section 15: Regulatory Information

Listed below are chemical substances subject to supplier notification requirements. The percentages when presented represent average values.

CAS Number	**SARA**	**WHMIS**	**CA-65**

313

None

CA-65 - Chemical Substance identified under the California Proposition 65 column are known to the State of California to Cause and/or reproductive toxicity.

TSCA Status:

All ingredients of product comply with the requirements of the US EPA Toxic Substance Control Act.

Material Safty Data Sheet Continued

Section 16: Other

Prepared by Management

The above information and recommendations are believed accurate and reliable. Because it is not possible to anticipate all conditions of use, addition saftey precaustions may be required. AA Thread Seal Tape, Inc. makes no warranty, either expressed or implied, including merchantability and fitness.

User Responsibility: Each user should read and understand this information and incorporate it into individual site saftey programs in accordance with applicable hazard communication standards and regulations.