



KEENAN VAULT NEW GRAY MMK702

ICP Construction

Version No: 2.2
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 04/25/2017
Print Date: 04/25/2017
S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

| | |
|-------------------------------|------------------------------|
| Product name | KEENAN VAULT NEW GRAY MMK702 |
| Synonyms | Not Available |
| Other means of identification | Not Available |

Recommended use of the chemical and restrictions on use

| | |
|--------------------------|-------|
| Relevant identified uses | Paint |
|--------------------------|-------|

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

| | |
|-------------------------|--|
| Registered company name | ICP Construction |
| Address | 150 Dascomb Road Massachusetts Andover United States |
| Telephone | 978-623-9980 |
| Fax | Not Available |
| Website | Not Available |
| Email | Not Available |

Emergency phone number

| | |
|-----------------------------------|----------------|
| Association / Organisation | Chemtel |
| Emergency telephone numbers | 1-800-255-3924 |
| Other emergency telephone numbers | 1-813-248-0585 |

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

| | |
|----------------|---|
| Classification | Eye Irritation Category 2A, Skin Corrosion/Irritation Category 2, Carcinogenicity Category 2, Acute Aquatic Hazard Category 3 |
|----------------|---|

Label elements

| | |
|--------------------|--|
| GHS label elements | |
|--------------------|--|

| | |
|-------------|----------------|
| SIGNAL WORD | WARNING |
|-------------|----------------|

Hazard statement(s)

| | |
|------|--------------------------------|
| H319 | Causes serious eye irritation. |
| H315 | Causes skin irritation. |
| H351 | Suspected of causing cancer. |
| H402 | Harmful to aquatic life |

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

| | |
|------|---|
| P201 | Obtain special instructions before use. |
|------|---|

Continued...

| | |
|------|--|
| P281 | Use personal protective equipment as required. |
| P273 | Avoid release to the environment. |

Precautionary statement(s) Response

| | |
|----------------|--|
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

Precautionary statement(s) Storage

| | |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

Precautionary statement(s) Disposal

| | |
|------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|------|---|

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|------------|-----------|---------------------------------------|
| 1332-58-7 | | kaolin |
| 7664-41-7 | 1-10 | ammonia anhydrous liquefied |
| 126-86-3 | <1 | 2,4,7,9-tetramethyl-5-decyne-4,7-diol |
| 51274-00-1 | <1 | C.I. Pigment Yellow 42 |
| 1333-86-4 | <1 | carbon black |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

| | |
|---------------------|---|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> 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 | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. |
| Ingestion | <ul style="list-style-type: none"> Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES**Extinguishing media**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|-------------|
| Fire Incompatibility | None known. |
|-----------------------------|-------------|

Special protective equipment and precautions for fire-fighters

| | |
|----------------------|---|
| Fire Fighting | <ul style="list-style-type: none"> Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. |
|----------------------|---|

| | |
|------------------------------|--|
| | <ul style="list-style-type: none"> ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes. |

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 | <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal. |
| Major Spills | Moderate hazard. <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ 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. ▶ Stop leak if safe to do so. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Neutralise/decontaminate residue (see Section 13 for specific agent). ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and 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 | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with moisture. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work 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. ▶ DO NOT allow clothing wet with material to stay in contact with skin |
| Other information | |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|---|
| Suitable container | <ul style="list-style-type: none"> ▶ Polyethylene or polypropylene container. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | None known |

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|------------|---------------------------------------|-----------------------|---------------|---------------|------------------|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | kaolin | Kaolin / Kaolin - Respirable fraction | 15 mg/m3 / 5 mg/m3 | Not Available | Not Available | Total dust;(IGE) |

KEENAN VAULT NEW GRAY MMK702

| | | | | | | |
|---|-----------------------------|---|----------------------------|-------------------|---------------|---|
| US OSHA Permissible Exposure Levels (PELs) - Table Z3 | kaolin | Silicates: Mica / Silicates: Soapstone / Silicates: Talc / Silicates: Tremolite, asbestiforms | 0.1 f/cc / 20 mppcf | Not Available | Not Available | (less than 1% crystalline silica) / (containing asbestos) Use asbestos limit;(less than 1% crystalline silica) / (see 29 CFR 1910.1001);(less than 1% crystalline silica) |
| US ACGIH Threshold Limit Values (TLV) | kaolin | Kaolin | 2 mg/m3 | Not Available | Not Available | TLV® Basis: Pneumoconiosis |
| US NIOSH Recommended Exposure Limits (RELs) | kaolin | China clay, Clay, Hydrated aluminum silicate, Hydrite, Porcelain clay [Note: Main constituent of Kaolin is Kaolinite (Al ₂ Si ₂ O ₅ (OH) ₄ .] | 10 (total), 5 (resp) mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | ammonia anhydrous liquefied | Ammonia | 35 mg/m3 / 50 ppm | Not Available | Not Available | Not Available |
| US ACGIH Threshold Limit Values (TLV) | ammonia anhydrous liquefied | Ammonia | 25 ppm | 35 ppm | Not Available | TLV® Basis: Eye dam; URT irr |
| US NIOSH Recommended Exposure Limits (RELs) | ammonia anhydrous liquefied | Anhydrous ammonia, Aqua ammonia, Aqueous ammonia [Note: Often used in an aqueous solution.] | 18 mg/m3 / 25 ppm | 27 mg/m3 / 35 ppm | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | carbon black | Carbon black | 3.5 mg/m3 | Not Available | Not Available | Not Available |
| US ACGIH Threshold Limit Values (TLV) | carbon black | Carbon black | 3 mg/m3 | Not Available | Not Available | TLV® Basis: Bronchitis |
| US NIOSH Recommended Exposure Limits (RELs) | carbon black | Acetylene black, Channel black, Furnace black, Lamp black, Thermal black | 3.5 mg/m3 | Not Available | Not Available | Ca See Appendix A See Appendix C |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---------------------------------------|---|---------------|---------------|---------------|
| ammonia anhydrous liquefied | Ammonia | Not Available | Not Available | Not Available |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | Tetramethyl-5-decyne-4,7-diol, 2,4,7,9- | 30 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |
| carbon black | Carbon black | 9 mg/m3 | 99 mg/m3 | 590 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---------------------------------------|-----------------------|---------------|
| kaolin | Not Available | Not Available |
| ammonia anhydrous liquefied | 500 ppm | 300 ppm |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | Not Available | Not Available |
| C.I. Pigment Yellow 42 | Not Available | Not Available |
| carbon black | N.E. mg/m3 / N.E. ppm | 1,750 mg/m3 |

Exposure controls

| Appropriate engineering controls | <p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> | | | | | | | | | | |
|---|---|------------------------------|---|--|--|---|----------------------------------|--|----------------------------|--|------------------------------|
| | <table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min.)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> | Type of Contaminant: | Air Speed: | solvent, vapours, degreasing etc., evaporating from tank (in still air). | 0.25-0.5 m/s (50-100 f/min.) | aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) | direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) |
| | Type of Contaminant: | Air Speed: | | | | | | | | | |
| | solvent, vapours, degreasing etc., evaporating from tank (in still air). | 0.25-0.5 m/s (50-100 f/min.) | | | | | | | | | |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) | | | | | | | | | | |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | | | | | | | | | | |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) | | | | | | | | | | |
| <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> </tbody> </table> | Lower end of the range | Upper end of the range | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | | | |
| Lower end of the range | Upper end of the range | | | | | | | | | | |
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | | | | | | | | | | |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | | | | | | | | | | |
| 3: Intermittent, low production. | 3: High production, heavy use | | | | | | | | | | |
| | | | | | | | | | | | |

| | | |
|-------------------------|---|----------------------------------|
| | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
| | Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. | |
| Personal protection |  | |
| Eye and face protection | <ul style="list-style-type: none"> ▶ 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 | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>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.</p> <p>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.</p> <p>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 moisturizer is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> • frequency and duration of contact, • chemical resistance of glove material, • glove thickness and • dexterity <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> • 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. <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>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.</p> <p>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.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> • 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 <p>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.</p> | |
| Body protection | See Other protection below | |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream. ▶ Skin cleansing cream. ▶ Eye wash unit. | |
| Thermal hazards | Not Available | |

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| Appearance | Text | | |
|-------------------------------------|---------------|---|---------------|
| Physical state | liquid | Relative density (Water = 1) | Not Available |
| 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) | Not Available | Viscosity (cSt) | Not Available |

| | | | |
|--|---------------|----------------------------------|---------------|
| Initial boiling point and boiling range (°C) | Not Available | 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 Available | Gas group | Not Available |
| Solubility in water (g/L) | Immiscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ 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 (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| Ingestion | The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. |
| Skin Contact | <p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye | This material can cause eye irritation and damage in some persons. |
| Chronic | There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. |

| | | |
|---------------------------------------|--|-----------------|
| KEENAN VAULT NEW GRAY MMK702 | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| kaolin | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| ammonia anhydrous liquefied | TOXICITY | IRRITATION |
| | Inhalation (rat) LC50: 2000 ppm/4hr ^[2] | Not Available |
| | Inhalation (rat) LC50: 2375 ppm/1hr ^[2] | |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >1000 mg/kg ^{**[2]} | Eye: SEVERE ** |
| | Oral (rat) LD50: 4600 mg/kg ^{**[2]} | Skin: SEVERE ** |
| C.I. Pigment Yellow 42 | TOXICITY | IRRITATION |
| | Oral (rat) LD50: >5000 mg/kg ^[2] | Not Available |
| carbon black | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >3000 mg/kg ^[2] | Not Available |

Oral (rat) LD50: >10000 mg/kg^[1]**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|---|---|
| KAOLIN | For bentonite clays: Bentonite (CAS No. 1302-78-9) consists of a group of clays formed by crystallization of vitreous volcanic ashes that were deposited in water. The expected acute oral toxicity of bentonite in humans is very low. However, when bentonite had been used as a prophylactic paste, larger amounts caused severe eye injury, including abscesses behind the cornea. |
| 2,4,7,9-TETRAMETHYL-5-DECYNE-4,7-DIOL | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. * [Sigma/Aldrich] ** For similar product CAS RN: 68227-33-8 Rats were orally administered this material in the diet for 28 days at concentrations of 0, 750, 1500, 3000, and 6000 ppm. No adverse effects were seen at any of the dose levels. The oral No-Observed-Effect-Level (NOEL) was 6000 ppm. After 91 day on test, a significant increase in liver weights with accompanying microscopic changes was observed in both sexes in the high-dose group. The oral NOEL was 1000 mg/kg/day for both the reproduction and repeated dose phases of this experiment. This material was administered orally to dogs at dose levels of 0, 200, 400, and 600 mg/kg/day for 91 days. |
| C.I. PIGMENT YELLOW 42 | The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| CARBON BLACK | WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. Inhalation (rat) TCLo: 50 mg/m ³ /6h/90D-I Nil reported |
| KAOLIN & AMMONIA ANHYDROUS LIQUEFIED & C.I. PIGMENT YELLOW 42 & CARBON BLACK | No significant acute toxicological data identified in literature search. |
| AMMONIA ANHYDROUS LIQUEFIED & C.I. PIGMENT YELLOW 42 | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. |

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

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION**Toxicity**

| KEENAN VAULT NEW GRAY MMK702 | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------------------------------|----------------|--------------------|----------------|----------------|----------------|
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| kaolin | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|--------|----------------|--------------------|----------------|----------------|----------------|
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| ammonia anhydrous liquefied | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-----------------------------|----------|--------------------|-------------------------------|-------------|--------|
| | LC50 | 96 | Fish | 0.068mg/L | 2 |
| | EC50 | 48 | Crustacea | 0.179mg/L | 5 |
| | EC50 | 96 | Algae or other aquatic plants | 311.661mg/L | 3 |
| | EC50 | 1440 | Crustacea | 0.016mg/L | 5 |
| | NOEC | Not Applicable | Fish | 0.0015mg/L | 5 |

| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---------------------------------------|----------|--------------------|---------|-----------|--------|
| | LC50 | 96 | Fish | 3.780mg/L | 3 |

| C.I. Pigment Yellow 42 | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------------------------|----------|--------------------|---------|----------|--------|
| | LC50 | 96 | Fish | 0.05mg/L | 2 |

Continued...

KEENAN VAULT NEW GRAY MMK702

| | | | | |
|------|-----|-------------------------------|----------|---|
| EC50 | 72 | Algae or other aquatic plants | 18mg/L | 2 |
| EC50 | 504 | Crustacea | 4.49mg/L | 2 |
| NOEC | 504 | Fish | 0.52mg/L | 2 |

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|----------|--------------------|-----------|-----------|--------|
| LC50 | 96 | Fish | =1000mg/L | 1 |
| EC50 | 24 | Crustacea | >5600mg/L | 1 |
| NOEC | 96 | Fish | =1000mg/L | 1 |

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms.

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---------------------------------------|-------------------------|------------------|
| ammonia anhydrous liquefied | LOW | LOW |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | HIGH | HIGH |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---------------------------------------|----------------------|
| ammonia anhydrous liquefied | LOW (LogKOW = 0.229) |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | LOW (LogKOW = 3.609) |

Mobility in soil

| Ingredient | Mobility |
|---------------------------------------|-------------------|
| ammonia anhydrous liquefied | LOW (KOC = 14.3) |
| 2,4,7,9-tetramethyl-5-decyne-4,7-diol | LOW (KOC = 21.29) |

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ 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. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ 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

| | |
|------------------|----|
| Marine Pollutant | NO |
|------------------|----|

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

Continued...

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

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

KAOLIN(1332-58-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|---|
| US - Alaska Limits for Air Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - Hawaii Air Contaminant Limits | US - Washington Permissible exposure limits of air contaminants |
| US - Idaho - Limits for Air Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Michigan Exposure Limits for Air Contaminants | US ACGIH Threshold Limit Values (TLV) |
| US - Minnesota Permissible Exposure Limits (PELs) | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - Oregon Permissible Exposure Limits (Z-1) | US NIOSH Recommended Exposure Limits (RELs) |
| US - Pennsylvania - Hazardous Substance List | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Rhode Island Hazardous Substance List | US OSHA Permissible Exposure Levels (PELs) - Table Z3 |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |

AMMONIA ANHYDROUS LIQUEFIED(7664-41-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|---|
| International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - Alaska Limits for Air Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) | US - Washington Permissible exposure limits of air contaminants |
| US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) | US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Hawaii Air Contaminant Limits | US ACGIH Threshold Limit Values (TLV) |
| US - Idaho - Limits for Air Contaminants | US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs) |
| US - Massachusetts - Right To Know Listed Chemicals | US CWA (Clean Water Act) - List of Hazardous Substances |
| US - Michigan Exposure Limits for Air Contaminants | US EPCRA Section 313 Chemical List |
| US - Minnesota Permissible Exposure Limits (PELs) | US NIOSH Recommended Exposure Limits (RELs) |
| US - Oregon Permissible Exposure Limits (Z-1) | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Pennsylvania - Hazardous Substance List | US SARA Section 302 Extremely Hazardous Substances |
| US - Rhode Island Hazardous Substance List | US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |

2,4,7,9-TETRAMETHYL-5-DECYNE-4,7-DIOL(126-86-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| |
|---|
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
|---|

C.I. PIGMENT YELLOW 42(51274-00-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| US - Alaska Limits for Air Contaminants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Pennsylvania - Hazardous Substance List | |

CARBON BLACK(1333-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|--|
| International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs | US - Rhode Island Hazardous Substance List |
| US - Alaska Limits for Air Contaminants | US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants |
| US - California Proposition 65 - Carcinogens | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - Hawaii Air Contaminant Limits | US - Washington Permissible exposure limits of air contaminants |
| US - Idaho - Limits for Air Contaminants | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Massachusetts - Right To Know Listed Chemicals | US ACGIH Threshold Limit Values (TLV) |
| US - Michigan Exposure Limits for Air Contaminants | US ACGIH Threshold Limit Values (TLV) - Carcinogens |
| US - Minnesota Permissible Exposure Limits (PELs) | US NIOSH Recommended Exposure Limits (RELs) |
| US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Oregon Permissible Exposure Limits (Z-1) | US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity |
| US - Pennsylvania - Hazardous Substance List | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

| | |
|---------------------------------|-----|
| Immediate (acute) health hazard | Yes |
| Delayed (chronic) health hazard | Yes |
| Fire hazard | No |
| Pressure hazard | No |
| Reactivity hazard | No |

Continued...

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|---------|------------------------------------|---------------------------|
| Ammonia | 100 | 45.4 |

State Regulations**US. CALIFORNIA PROPOSITION 65**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - CALIFORNIA PREPOSITION 65 - CARCINOGENS & REPRODUCTIVE TOXICITY (CRT): LISTED SUBSTANCE

Carbon black (airborne, unbound particles of respirable size) Listed

| National Inventory | Status |
|-------------------------------|---|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (kaolin; ammonia anhydrous liquefied; carbon black; 2,4,7,9-tetramethyl-5-decyne-4,7-diol; C.I. Pigment Yellow 42) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | N (kaolin; ammonia anhydrous liquefied; carbon black; 2,4,7,9-tetramethyl-5-decyne-4,7-diol; C.I. Pigment Yellow 42) |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION**CONTACT POINT**

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

Other information**Ingredients with multiple cas numbers**

| Name | CAS No |
|------------------------|---|
| C.I. Pigment Yellow 42 | 51274-00-1, 12259-21-1, 105478-30-6, 53028-10-7, 1342-51-4, 12000-32-7, 50641-37-7, 51109-85-4, 99241-66-4, 131462-81-2, 147625-38-5, 12001-03-5, 185464-57-7, 182761-12-2, 94809-98-0, 934248-40-5 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.