SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	TCPP
CAS-No.	:	1244733-77-4
Formula	:	C9H18Cl3O4P

1.2. Recommended use and restrictions on use

Recommended use	:	Polyurethane foam, polyvinyl chloride, polyvinyl acetate, phenolic resin and epoxy resin.
Restrictions on use	:	Not available

1.3. Supplier

Chemcura LLC
13065 New Providence Rd, Milton, GA 30004, USA

1.4. Emergency telephone number

Emergency number	:	+1 678 225 9274

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Carcinogenicity, Category 2	H351	Suspected of causing cancer.

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Warning

Hazard statements (GHS US) :
H302 - Harmful if swallowed.
H351 - Suspected of causing cancer.

Precautionary statements (GHS US) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P330 - Rinse mouth.
P405 - Store locked up.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : UVCB
Name : TCPP
CAS-No. : 1244733-77-4

Name	Product identifier	%	GHS US classification
Reaction products of phosphoryl trichloride and 2-methyloxirane	CAS-No.: 1244733-77-4	99.8	Acute Tox. 4 (Oral), H302 Carc. 2, H351
Water	CAS-No.: 7732-18-5	0.2	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If unconscious, place in the recovery position and seek medical advice. In case of irregular breathing or respiratory arrest provide artificial respiration. Do not apply mouth-to-mouth resuscitation. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

First-aid measures after skin contact : Wash skin with plenty of water. Remove contaminated clothing and shoes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove any contact lenses and open eyelids wide apart. Protect uninjured eye. Consult an ophtalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth. Drink some glasses of water. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, call a physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.

Symptoms/effects after skin contact : None under normal conditions.

Symptoms/effects after eye contact : None under normal conditions.

Symptoms/effects after ingestion : Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	:	Water spray. Dry powder. Alcohol-resistant foam. Carbon dioxide.
Unsuitable extinguishing media	:	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	:	No fire hazard.
Explosion hazard	:	No direct explosion hazard.
Hazardous decomposition products in case of fire	:	Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	:	Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear recommended personal protective equipment.
Emergency procedures	:	Ventilate spillage area. No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Do not touch or walk on the spilled product. Wear personal protective equipment.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

For containment	:	Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
Methods for cleaning up	:	Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel). Keep in suitable, closed containers for disposal.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	:	Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.
Hygiene measures	:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Keep in a cool, well-ventilated place away from heat.
Storage conditions	:	Store locked up. Protect material from direct sunlight. Keep container tightly closed and dry. Keep away from food and drink. Containers which are opened should be properly resealed and kept upright to prevent leakage. Do not store in unlabelled containers.
Storage temperature	:	< 50 °C
Packaging materials	:	Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Environmental exposure controls	:	Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

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

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Colour	:	Colourless
Odour	:	odourless
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	< -20 °C
Freezing point	:	No data available
Boiling point	:	288 °C
Flash point	:	> 245 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	0.000014 hPa (25 °C)
Relative vapour density at 20°C	:	No data available
Relative density	:	1.29 (20 °C)
Molecular mass	:	327.57 g/mol
Solubility	:	Water: 1.08 g/l (20 °C)
Partition coefficient n-octanol/water (Log Pow)	:	2.68 (30 °C)
Auto-ignition temperature	:	> 400 °C
Decomposition temperature	:	288 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	Not explosive.
Oxidising properties	:	Non oxidizing.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Incompatible materials. Avoid high temperatures. Protect from moisture.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

On combustion, forms: carbon oxides (CO and CO2). Phosphorus oxides. Halogenated compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
LD50 oral rat	632 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 Inhalation - Rat	> 7 mg/l/4h

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact : None under normal conditions.
Symptoms/effects after eye contact : None under normal conditions.
Symptoms/effects after ingestion : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
LC50 96h - Fish [1]	51 mg/l
EC50 48h - Crustacea [1]	131 mg/l
NOEC chronic crustacea	32 mg/l
NOEC chronic algae	13 mg/l

12.2. Persistence and degradability

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
BCF - Fish [1]	14
Partition coefficient n-octanol/water (Log Pow)	2.68 (30 °C)
Bioaccumulative potential	No bioaccumulation potential.

12.4. Mobility in soil

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.76

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not regulated
Proper Shipping Name (TDG) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not regulated

TDG
Transport hazard class(es) (TDG) : Not regulated

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT) : Not regulated
Packing group (TDG) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT
Not regulated

TDG
Not regulated

IMDG
Not regulated

IATA
Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

TCPP (1244733-77-4)	
SARA Section 311/312 Hazard Classes	Health hazard - Carcinogenicity Health hazard - Acute toxicity (any route of exposure)

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Reaction products of phosphoryl trichloride and 2-methyloxirane	1244733-77-4	Not present	-	
Water	7732-18-5	Present	Active	XU

15.2. International regulations

CANADA

Reaction products of phosphoryl trichloride and 2-methyloxirane (1244733-77-4)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Water (7732-18-5)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

according to Federal Register / Vol. 89, No. 98

Full text of hazard classes and H-statements	
H302	Harmful if swallowed.
H351	Suspected of causing cancer.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.