

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
 Trade name : THPC - Urea Precondensate SH
 CAS No : 27104-30-9
 Product code : 657
 Formula : (C4H12O4P.CH4N2O.Cl)x

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use
 Restrictions on use of the substance/mixture : Not determined

1.3. Details of the supplier of the safety data sheet

Special Materials Company
 70 West 40th Street, 2nd Floor
 New York, NY 10018

1.4. Emergency telephone number

Emergency number : CHEMTREC - (800) 424-9300 | Outside the US: (703) 527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 3 (Oral) H301
 Acute Tox. 3 (Dermal) H311
 Eye Dam. 1 H318
 Skin Sens. 1 H317
 Carc. 1B H350

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H301+H311 - Toxic if swallowed or in contact with skin
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H350 - May cause cancer (Inhalation)

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P261 - Avoid breathing mist, spray, vapors
 P264 - Wash hands, forearms and face thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 P330 - Rinse mouth
 P302+P352 - If on skin: Wash with plenty of water
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
 P361 - Take off immediately all contaminated clothing
 P363 - Wash contaminated clothing 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
 P308+P313 - If exposed or concerned: Get medical advice/attention
 P405 - Store locked up

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

Formaldehyde is listed on NTP and IARC list of carcinogens, refer to 29 CFR 1910.1048 for complete information on the hazards of formaldehyde. Skin sensitizer, contact with the skin will cause severe irritation and pain. Repeated and / or prolonged contact with the skin may cause allergic reaction and / or sensitization.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
tetrakis(hydroxymethyl)phosphonium chloride	(CAS No) 124-64-1	0 - 61	Acute Tox. 3 (Oral), H301
THPC- Urea Precondensate	(CAS No) 27104-30-9	0 - 65	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1B, H350
Formaldehyde	(CAS No) 50-00-0	0.1 - 0.25	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:dust,mist), H331 Skin Corr. 1B, H314 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1A, H350

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing stops, give artificial respiration. Get immediate medical advice/attention.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Give water to drink if victim completely conscious/alert. Never give anything by mouth to an unconscious person. Do not induce vomiting. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	: Burns. May cause an allergic skin reaction.
Symptoms/injuries after eye contact	: Serious damage to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂), water spray, sand, earth.
Unsuitable extinguishing media	: None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Potentially combustible ingredients may ignite, causing fire to spread, increasing risk of burns or injuries. Exercise caution when fighting any chemical fire.
Explosion hazard	: On heating, there is a risk of bursting due to internal pressure build-up. Cool down the containers exposed to heat with a water spray.
Reactivity	: On burning: release of toxic and corrosive gases/vapors hydrogen chloride carbon monoxide - carbon dioxide. Ammonia. Nitrogen oxides. Phosphorus oxides.

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

5.3. Advice for firefighters

- Firefighting instructions : Eliminate all ignition sources if safe to do so. Fight fire with normal precautions from a reasonable distance. Exercise caution when fighting any chemical fire.
- 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

6.1.1. For non-emergency personnel

- Protective equipment : Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.
- Emergency procedures : Evacuate unnecessary personnel. No flames, no sparks. Eliminate all sources of ignition. Keep upwind.

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".

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Collect all waste in suitable and labeled containers and dispose according to local legislation.
- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
- 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

- 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. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not get in eyes, on skin, or on clothing. Do not breathe vapors.
- Hygiene measures : Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. 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

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.
- Incompatible materials : Strong acids. Strong oxidizers.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

THPC Urea Precondensate (27104-30-9)	
ACGIH	Not applicable
OSHA	Not applicable
Formaldehyde (50-00-0)	
ACGIH	2 ppm (2.5mg/m ³) 8 hr. TWA
OSHA	0.75 ppm (1mg/m ³) 8 hr. TWA; 2 ppm 15 min. STEL
THPC- Urea Precondensate (27104-30-9)	
ACGIH	Not applicable

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

THPC- Urea Precondensate (27104-30-9)	
OSHA	Not applicable

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls	: Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Ensure good ventilation of the work station.
Hand protection	: Neoprene or nitrile rubber gloves. PVC gloves. Butyl-rubber protective gloves.
Eye protection	: Protective eyeglasses or chemical safety goggles.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Wear respiratory protection.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Straw colored
Odor	: Pungent
Odor threshold	: No data available
pH	: 4.5 - 5.5
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: ≈ 0 °C
Boiling point	: 239 °F
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: > 1
Relative density	: No data available
Specific gravity / density	: 1.3
Solubility	: Soluble in water. Water: Solubility in water of component(s) of the mixture ; tetrakis(hydroxymethyl)phosphonium chloride : 4 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapors hydrogen chloride carbon monoxide - carbon dioxide. Ammonia. Nitrogen oxides. Phosphorus oxides.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong oxidizers.

10.6. Hazardous decomposition products

Thermal decomposition generates : Toxic fumes. Phosphorous oxide. Carbon oxides (CO, CO₂). Ammonia. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Ingestion, inhalation, dermal; eye and skin contact
Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.

THPC Urea Precondensate (f)27104-30-9	
LD50 oral rat	> 962 mg/kg
ATE US (oral)	126.218 mg/kg body weight
ATE US (dermal)	725.689 mg/kg body weight

Formaldehyde (50-00-0)	
ATE US (oral)	100.000 mg/kg body weight
ATE US (dermal)	300.000 mg/kg body weight
ATE US (dust, mist)	0.500 mg/l/4h

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)	
LD50 oral rat	161 mg/kg (Rat)
LD50 dermal rabbit	> 4084 mg/kg (Rabbit)
ATE US (oral)	161.000 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 4.5 - 5.5
Serious eye damage/irritation : Causes serious eye damage.
pH: 4.5 - 5.5
Respiratory or skin sensitization : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
(Lack of data)
Carcinogenicity : May cause cancer (Inhalation).

Formaldehyde (50-00-0)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
(Lack of data)
Specific target organ toxicity (repeated exposure) : Not classified
(Lack of data)
Aspiration hazard : Not classified
Symptoms/injuries after skin contact : Burns. May cause an allergic skin reaction.
Symptoms/injuries after eye contact : Serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

THPC Urea Precondensate (27104-30-9)	
NOEC chronic algae	0.652 mg/l green algae

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.2. Persistence and degradability

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)

Persistence and degradability : Biodegradability in water: no data available. Not established.

12.3. Bioaccumulative potential

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)

Log Pow : -9.77 (Estimated value)

Bioaccumulative potential : Low potential for bioaccumulation (Log Kow < 4). Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No data available.

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN2810 Toxic, liquids, organic, n.o.s. [Tetrakis(hydroxymethyl)phosphonium chlo-ride], 6.1, III

UN-No.(DOT) : UN2810

Proper Shipping Name (DOT) : Toxic, liquids, organic, n.o.s.
[Tetrakis(hydroxymethyl)phosphonium chlo-ride]

Transport hazard class(es) (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 6.1 - Poison inhalation hazard



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

T11 - 6 178.274(d)(2) Normal..... 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Marine pollutant : Marine Pollutant



Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 2810, 6.1, III

Packing group (ADR) : III

Class (ADR) : 6.1 - Toxic substances

Hazard identification number (Kemler No.) : 60

Hazard labels (ADR) : 6.1 - Toxic substances



Transport by sea

UN-No. (IMDG) : 2810

Proper Shipping Name (IMDG) : TOXIC LIQUID, ORGANIC, N.O.S.

Class (IMDG) : 6.1 - Toxic substances

Packing group (IMDG) : III - substances presenting low danger

Air transport

UN-No.(IATA) : 2810

Proper Shipping Name (IATA) : Toxic liquid, organic, n.o.s.

Class (IATA) : 6.1 - Toxic Substances

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

THPC Urea Precondensate (27104-30-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	20000 lb for mixture (Formaldehyde RQ=100 lbs)
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb Formaldehyde
SARA Section 311/312 Hazard Classes	Immediate health hazard. Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Formaldehyde

Formaldehyde (50-00-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

THPC Urea Precondensate (27104-30-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes

Immediate health hazard.
Delayed (chronic) health hazard

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

Formaldehyde (50-00-0)

Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations

Formaldehyde (50-00-0)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	

Formaldehyde (50-00-0)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

THPC Urea Precondensate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Muta. 2	Germ cell mutagenicity Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Sens. 1	Skin sensitization Category 1
H301	Toxic if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer

HMIS III Rating

Health	: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability	: 1 Slight Hazard
Physical	: 0 Minimal Hazard
Personal Protection	: H

SDS US (GHS HazCom 2012)

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