

M651_Tetrakis(hydroxymethyl)phosphonium Chloride_80%

Safety Data Sheet

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

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

1.1. Product identifier

Product form	: Substance
Substance name	: M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80%
Chemical name	: Tetrakis(hydroxymethyl)phosphonium chloride
CAS No	: 124-64-1
Product code	: M651
Formula	: C4H12ClO4P
Synonyms	: phosphonium, tetrakis(hydroxymethyl)-, chloride / tetrahydroxymethylphosphonium chloride / tetrakis(hydroxymethyl)phosphochloride / THPC (=tetrakis(hydroxymethyl)phosphonium chloride) / Toxic solid, organic, n.o.s.

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

Use of the substance/mixture : Industrial use

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. 4 (Dermal)	H312
Skin Irrit. 2	H315
Eye Dam. 1	H318
Skin Sens. 1	H317
Carc. 1A	H350
Aquatic Chronic 2	H411

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 - Toxic if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H350 - May cause cancer
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact

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lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor/physician
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P391 - Collect spillage
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

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80%
CAS No : 124-64-1

Name	Product identifier	%	Classification (GHS-US)
tetrakis(hydroxymethyl)phosphonium chloride	(CAS No) 124-64-1	~ 80	Acute Tox. 3 (Oral), H301
Formaldehyde	(CAS No) 50-00-0	0.1 - 0.5	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

3.2. Mixture

Not applicable

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention. Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Never give anything by mouth to an unconscious person.

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If breathing stops, give artificial respiration. Get medical advice/attention.

First-aid measures after skin contact : Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Take off contaminated clothes, wash skin with plenty of water or have a shower (during minimum 15 minutes) and if necessary take medical advice. Rinse skin with water/shower. Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain emergency medical attention.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

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

Symptoms/injuries : No data available.

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Carbon dioxide. Water spray. Foam.

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 : Not flammable.

Explosion hazard : None known.

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Reactivity : When heated to decomposition, emits toxic fumes. Phosphorous oxide. Chlorine. Carbon oxides (CO, CO2). Corrosive vapors.

5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Use water spray or fog for cooling exposed containers. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area.

6.1.1. For non-emergency personnel

Protective equipment : Use chemically protective clothing. Chemical resistant gloves (according to European standard NF EN 374 or equivalent). Wear respiratory protection.

Emergency procedures : Mark the danger area. Evacuate unnecessary personnel. Keep upwind. Remove all sources of ignition. Do not breathe vapors. Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Dike for recovery or absorb with appropriate material. Collect spillage. Use suitable disposal containers.

Methods for cleaning up : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Use suitable disposal containers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Use personal protective equipment as required. Provide good ventilation in process area to prevent formation of vapor. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hygiene measures : Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible products : Strong bases. Strong acids. Oxidizing agent.

Heat-ignition : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Prohibitions on mixed storage : Incompatible materials. (strong) acids. (strong) bases. Strong oxidizers.

Storage area : Keep container tightly closed and in a well-ventilated place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)

ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
OSHA	Not applicable	

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

Formaldehyde (50-00-0)	
ACGIH	Not applicable
OSHA	OSHA 0.75 ppm 8 hr TWA

8.2. Exposure controls

Personal protective equipment	: Avoid all unnecessary exposure.
Materials for protective clothing	: No data available.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear. light brown.
Molecular mass	: 190.57 g/mol
Color	: No data available on colour
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
pH solution	: ≈ 3 - 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	: Not determined
Relative vapor density at 20 °C	: > 1
Relative density	: No data available
Specific gravity / density	: 1.34
Solubility	: Soluble in water. Water: 4 g/100ml
Log Pow	: -9.77 (Estimated value)
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

VOC content	: 0.5 %
Other properties	: No data available

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SECTION 10: Stability and reactivity

10.1. Reactivity

When heated to decomposition, emits toxic fumes. Phosphorous oxide. Chlorine. Carbon oxides (CO, CO2). Corrosive vapors.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Chlorine. Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Harmful in contact with skin.

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (f)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
ATE US (dermal)	1100.000 mg/kg body weight

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

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

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : May cause cancer.

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)	
IARC group	3 - Not classifiable

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

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

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified
Potential Adverse human health effects and symptoms : Toxic if swallowed.

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Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - air : Not classified.
Ecology - water : No data available on ecotoxicity.

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)	
LC50 fish 1	2.9 mg/l Oncorhynchus mykiss (Rainbow trout)
EC50 Daphnia 1	8.7 mg/l

12.2. Persistence and degradability

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)	
Persistence and degradability	Not established.

tetrakis(hydroxymethyl)phosphonium chloride (124-64-1)	
Persistence and degradability	Biodegradability in water: no data available. Not established.

12.3. Bioaccumulative potential

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)	
Log Pow	-9.77 (Estimated value)
Bioaccumulative potential	Not established.

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 :
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with DOT
Transport document description : UN2810 Toxic, liquids, organic, n.o.s. (Tetrakis (Hydroxymethyl) Phosphonium Chloride 80%), 6.1, III
UN-No.(DOT) : UN2810
Proper Shipping Name (DOT) : Toxic, liquids, organic, n.o.s.
Department of Transportation (DOT) Hazard Classes : 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

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DOT Special Provisions (49 CFR 172.102)	:	IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 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)	:	153
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	220 L
DOT Vessel Stowage Location	:	A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	:	40 - Stow "clear of living quarters"

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
Classification code (ADR)	:	T2
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
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-A

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

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SECTION 15: Regulatory information

15.1. US Federal regulations

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)

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

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb Formaldehyde
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb Formaldehyde
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

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

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

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) - Formaldehyde	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ) - Formaldehyde	500 lb

15.2. International regulations

CANADA

No additional information available

EU-Regulations

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80% (124-64-1)

Listed on ELINCS (European List of Notified Chemical Substances)

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

Acute Tox. 3 (Oral) H301

Full text of H-phrases: see section 16

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

T; R25

Full text of R-phrases: see section 16

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

M651_Tetrakis(hydroxymethyl)phosphonium_chloride_80%(124-64-1)

State or local regulations U.S. - New Jersey - Right to Know Hazardous Substance List

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	

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

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

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

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SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
H301	Toxic if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H350	May cause cancer
H411	Toxic to aquatic life with long lasting effects

SDS US (GHS HazCom 2012)

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.