1: Identification

Product identifier

Product name: Chloramine-T trihydrate

Stock number: A12044
CAS Number: 7080-50-4
EC number: 204-954-7
Index number: 610-010-00-9

Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2: Hazard(s) identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

⚠️ GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

⚠️ GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

⚠️ GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

☢ C, Corrosive
R34: Causes burns.
哮 Xn: Harmful
R22: Harmful if swallowed.
哮 Xn: Sensitizing
R42: May cause sensitization by inhalation.
R31: Contact with acids liberates toxic gas.

Information concerning particular hazards for human and environment: Not applicable
Hazard not otherwise classified: No information known.

Label elements
Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labeled according to the CLP regulation.

Hazard pictograms

⚠️ GHS05 GHS07 GHS08

Signal word Danger

Hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P284 In case of inadequate ventilation wear respiratory protection.
P303+P351+P338 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

WHMIS classification
D2A - Very toxic material causing other toxic effects
E - Corrosive material

(Contd. on page: USA)
Product name: Chloramine-T trihydrate

Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
Health (acute effects) = 3
Flammability = 1
Reactivity = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3: Composition/information on ingredients
Chemical characterization: Substances
CAS® Description: 7080-50-4 N-Chloro-p-toluenesulfonamide sodium salt trihydrate
Identification number(s):
EC number: 204-854-7
Index number: 615-010-00-9

4: First-aid measures
Description of first aid measures
General information Immediately remove any clothing soiled by the product.
After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.

Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5: Fire-fighting measures
Extinguishing media
Suitable extinguishing agents In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
For safety reasons unsuitable extinguishing agents Water
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Sulfur oxides (SOx)
Sodium oxide
Nitrogen oxides (NOx)
Hydrogen chloride (HCl)

Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6: Accidental release measures
Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or any water course.
Do not allow to penetrate the ground/soil.
Methods and material for containment and cleaning up:
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7: Handling and storage
Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Prevent formation of dust.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store away from water/moisture.
Do not store together with acids.
Store away from oxidizing agents.
Store away from ammonia.

(Contd. on page 4)
**Product name:** Chloramine-T trihydrate

Further information about storage conditions:
- Store under dry inert gas.
- This product is moisture sensitive.
- Keep container tightly sealed.
- Store in cool, dry conditions in well sealed containers.
- Protect from humidity and water.
- Specific end use(s): No further relevant information available.

8: Exposure controls/personal protection

Additional information about design of technical systems:
- Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters**

Component with limit values that require monitoring at the workplace:
- The product does not contain any relevant quantifies of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**
- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Remove all soiled and contaminated clothing immediately.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.
- Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Recommended filter device for short term use**
- Use a respirator with type P100 (USA) or P3 (EU143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

**Protection of hands:**
- Impervious gloves
- Check protective gloves prior to each use for their proper condition.

**Penetration time of glove material (in minutes):** Not determined

**Eye protection:**
- Tightly sealed goggles
- Full face protection

**Body protection:** Protective work clothing.

9: Physical and chemical properties

**Information on basic physical and chemical properties**

**General information**

**Appearance:**
- Form: Crystalline
- Color: White to pale yellow
- Odor: Chlorine-like
- Odor threshold: Not determined.

**pH-value (50 g/l) at 20 °C (68 °F):** 8-10

**Change in condition**
- Melting point/Melting range: 167-170 °C (333-338 °F)
- Boiling point/Boiling range: Not determined
- Sublimation temperature / start: Not determined

**Flash point:** 192 °C (378 °F)

**Flammability (solid, gaseous):** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Auto Igniting:** Not determined

**Danger of explosion:** Not determined

**Explosion limits:**
- Lower: Not determined
- Upper: Not determined

**Vapor pressure:** Not applicable.

**Density:** Not determined

**Relative density:** Not determined

**Vapor density:** Not applicable.

**Evaporation rate:** Not applicable.

**Solubility in / Miscibility with water at 20 °C (68 °F):** 150 g/l

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**
- Dynamic: Not applicable.
- Kinematic: Not applicable.

**Other information**
- No further relevant information available.

10: Stability and reactivity

**Reactivity:** Contact with acids liberates toxic gas.

**Chemical stability:** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**
- Reacts with strong oxidizing agents
- Contact with acids liberates toxic gas.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:**
- Water/moisture
- Oxidizing agents
- Ammonia
- Acids
Product name: Chloramine-T trihydrate

Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Sulfur oxides (SOX)
Sodium oxide
Nitrogen oxides
Hydrogen chloride (HCl)

11: Toxicological information

Information on toxicological effects

Acute toxicity:
Harmful if swallowed.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The following RTECS statement/statements refer to the anhydrous compound.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.
LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.

Genotoxicity:
The following RTECS statement/statements refer to the anhydrous compound.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12: Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.

Additional ecological information:

General notes:
Do not allow material to be released to the environment without proper governmental permits.
Avoid transfer into the environment.

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects: No further relevant information available.

13: Disposal considerations

Waste treatment methods:
Recommendation: Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14: Transport information

UN-Number
DOT, IMDG, IATA: UN3263

UN proper shipping name
DOT: Corrosive solid, basic, organic, n.o.s. (Chloramine-T trihydrate)
IMDG, IATA: CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (Chloramine-T trihydrate)

Transport hazard class(es)

DOT

Class
Label: 8 Corrosive substances.

Class
Label: 9 (C8) Corrosive substances

IMDG, IATA

Class
Label: 8 Corrosive substances.

Packing group
DOT, IMDG, IATA: III

Environmental hazards:
Not applicable

Special precautions for user
Warning: Corrosive substances

EMS Number:
F-A-S-B

Segregation groups
Alkalis

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:

DOT
Marine Pollutant (DOT): No
15: Regualatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance inventory. All components of this product are listed on the Canadian Domestic Substances List (DSL).
Listed on TSCA inventory and Canadian DSL under the CAS# for anhydrous compound.
SARA Section 313 (specific toxic chemical listings) Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 85 - Developmental toxicity, female Substance is not listed.
Prop 85 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 57 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
REACH - Pre-registered substances Substance is listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16: Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with the Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Abbreviations and acronyms:
ADR: Accrd européen sur le transport des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR: US Department of Transportation
IAEA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EHSMS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (Division of the American Chemical Society)
HMIS: Hazardous Materials Information System (USA)
WHS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NIOSH: National Institute for Occupational Safety and Health (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)