

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA
GHS

Printing date July 21, 2015

Revision: July 21, 2015

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

- **1.1 Product identifier**
- **Trade name:** Defense Technology 40MM Ground Marker Saf-Smoke™ - 100 Meters
- **Article number:** 6483
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Explosive product.
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Safariland, LLC
13386 International Parkway
Jacksonville, FL 32218
Customer Care (800) 347-1200
- **Further information obtainable from:** Customer Care Department
- **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585



Poison Control Centres:
In the United Kingdom: 844 892 0111
In Australia: 131126
In New Zealand: +0800 764 766

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H412.



exploding bomb

Expl. 1.4 H204 Fire or projection hazard.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H412.
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



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- **Signal word** Warning

- **Hazard statements**

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H412.

H204 Fire or projection hazard.

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P250 Do not subject to grinding/shock/friction.

P280 Wear eye protection / face protection.

P373 DO NOT fight fire when fire reaches explosives.

P370+P380 In case of fire: Evacuate area.

P372 Explosion risk in case of fire.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**

Can become highly flammable in use.

- **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 3

- **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 3

- **HMIS Long Term Health Hazard Substances**

None of the ingredients are listed.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Explosive Product Notice**

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PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 9004-70-0 EC number: 603-037-0	Nitrocellulose, colloided, granular Expl. 1.1, H201	20-40%
CAS: 100-21-0 EINECS: 202-830-0	terephthalic acid substance with a Community workplace exposure limit	20-40%
CAS: 3811-04-9 EINECS: 223-289-7 Index number: 017-004-00-3	potassium chlorate Ox. Sol. 1, H271 Aquatic Chronic 2, H411 Acute Tox. 4, H302; Acute Tox. 4, H332	10-20%
CAS: 57-50-1 EINECS: 200-334-9	sucrose, pure substance with a Community workplace exposure limit	10-20%
CAS: 598-62-9 EINECS: 209-942-9	manganese carbonate substance with a Community workplace exposure limit	5-10%
CAS: 7757-79-1 EINECS: 231-818-8	potassium nitrate Ox. Sol. 2, H272	1-5%
CAS: 7440-21-3 EINECS: 231-130-8	silicon Flam. Sol. 2, H228	1-5%
CAS: 7429-90-5 EINECS: 231-072-3 Index number: 013-001-00-6	aluminium powder (pyrophoric) Pyr. Sol. 1, H250; Water-react. 2, H261	< 1,0%

· **Additional information:** For the wording of the listed Hazard Statements refer to section 16.

· **Notable Trace Components (≤ 0,1% w/w)**

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CAS: 122-39-4 EINECS: 204-539-4 Index number: 612-026-00-5	diphenylamine  Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331  STOT RE 2, H373  Aquatic Acute 1, H400; Aquatic Chronic 1, H410
CAS: 12403-82-6 EINECS: 235-642-2	dihydroxy[styphnato(2-)]dilead / lead styphnate  Unst. Expl., H200  Acute Tox. 3, H301; Acute Tox. 2, H330  Carc. 1B, H350; Repr. 2, H361; STOT RE 2, H373  Aquatic Acute 1, H400; Aquatic Chronic 1, H410

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Unlikely route of exposure.
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
Coughing
Slight irritant effect on eyes.
- **Hazards** Danger of blast or crush-type injuries.
- **4.3 Indication of any immediate medical attention and special treatment needed**
If necessary oxygen respiration treatment.
Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** None.
- **5.2 Special hazards arising from the substance or mixture**
Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.
Formation of toxic gases is possible during heating or in case of fire.

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- **5.3 Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information**

Eliminate all ignition sources if safe to do so.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions.

Individual devices will randomly explode. Will not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2008 Emergency response Guidebook for further information.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTEL AT 1-800-255-3924. Spills of this material should be handled carefully. Do not subject materials to mechanical shock or extreme heat. A spill of this material will normally not require emergency response team capabilities.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

Protect from heat.

- **6.2 Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

- **6.3 Methods and material for containment and cleaning up:**

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to section 13.

Clean the affected area carefully; suitable cleaners are:

Warm water and cleansing agent

- **6.4 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.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

Keep away from heat and direct sunlight.

Handle with care. Avoid jolting, friction and impact.

- **Information about fire - and explosion protection:**

Protect from heat.

Substance/product can reduce the ignition temperature of flammable substances.

Emergency cooling must be available in case of nearby fire.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Avoid storage near extreme heat, ignition sources or open flame.
Protect from humidity and water.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidising agents.
Store away from flammable substances.
- **Further information about storage conditions:** Store in dry conditions.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see section 7.
- **8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

100-21-0 terephthalic acid

TLV (USA)	Long-term value: 10 mg/m ³
EL (Canada)	Long-term value: 10 mg/m ³
EV (Canada)	Long-term value: 10 mg/m ³

57-50-1 sucrose, pure

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	Long-term value: 10 mg/m ³
EL (Canada)	Long-term value: 10 mg/m ³
EV (Canada)	Long-term value: 10 mg/m ³ total dust

598-62-9 manganese carbonate

PEL (USA)	Ceiling limit: 5 mg/m ³ as Mn
REL (USA)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³ as Mn
TLV (USA)	Long-term value: 0,02* 0,1* mg/m ³ as Mn; *respirable **inhalable fraction
EL (Canada)	Long-term value: 0,2 mg/m ³ as Mn; R

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7440-21-3 silicon

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn
EL (Canada)	Long-term value: 10 mg/m ³
EV (Canada)	Long-term value: 10 mg/m ³ total dust

7429-90-5 aluminium powder (pyrophoric)

PEL (USA)	Long-term value: 15*; 15** mg/m ³ *Total dust; ** Respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *Total dust **Respirable fraction
TLV (USA)	Long-term value: 1* mg/m ³ as Al; *as respirable fraction
EL (Canada)	Long-term value: 1,0 mg/m ³ metal and insoluble compounds, respirable
EV (Canada)	Long-term value: 5 mg/m ³ aluminium-containing (as aluminium)

- **DNELs** No further relevant information available.
- **PNECs** No further relevant information available.
- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes.

- **Respiratory protection:**

Not required under normal conditions of use.

Wear positive pressure NIOSH or European EN149 vapor respirators when deploying product in large quantities.

- **Protection of hands:**

Gloves not required under normal conditions of use.

Wear protective gloves to handle contents of damaged or leaking units.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.

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- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No further relevant information available.
- **Risk management measures**
See Section 7 for additional information.
Organizational measures should be in place for all activities involving this product.
No further relevant information available.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Solid metal container containing liquid and solid contents.

Colour: According to product specification

- **Odour:** Odourless

- **Odour threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

Melting point/Melting range: Not Determined.

Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

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

- **Auto/Self-ignition temperature:** Not determined.

- **Decomposition temperature:** Not determined.

- **Self-igniting:** Product is not self-igniting.

- **Danger of explosion:** Heating may cause an explosion.

- **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

- **Vapour pressure:** Not applicable.

- **Density:** Not determined.

- **Relative density** Not determined.

- **Vapour density** Not applicable.

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- **Evaporation rate** Not applicable.
 - **Solubility in / Miscibility with water:** Insoluble.
 - **Partition coefficient (n-octanol/water):** Not determined.
 - **Viscosity:**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
 - **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Reacts with flammable substances.
Can react violently with oxygen rich (oxidising) material. Danger of Explosion.
- **10.4 Conditions to avoid**
Store away from oxidising agents.
Keep ignition sources away - Do not smoke.
Cartridge may detonate if case is punctured or severely damaged.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides
Toxic metal oxide smoke
Chlorine compounds

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:**

3811-04-9 potassium chlorate

Oral	LD50	1870 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin.
- **Serious eye damage/irritation**
Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

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- **Additional toxicological information:**
Normal handling of the undeployed product poses little or no health hazards, One should avoid inhalation by wearing appropriate respiratory protection when exposed to the chemical ingredients of the product above listed TLV's or when exposed to the post ignition by-products. This product is a canister which contains the various components completely sealed within. Therefore, under normal handling of this product, no exposure to any harmful materials will occur. When the product is used, particles may be generated which may be irritating to the eyes and the respiratory tract.
- **Acute effects (acute toxicity, irritation and corrosivity):** May be harmful if inhaled.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
- **Germ cell mutagenicity**
Based on available data, the classification criteria are not met.
- **Carcinogenicity**
Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
Based on available data, the classification criteria are not met.
- **STOT-single exposure**
Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
Based on available data, the classification criteria are not met.
- **Aspiration hazard**
Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to local official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
- **DOT, ADR, IMDG** UN0303
- **IATA** FORBIDDEN
- **14.2 UN proper shipping name**
- **DOT, IMDG** Ammunition Smoke with or without burster, expelling charge or propelling charge
- **ADR** 0303, 1.4G, Ammunition Smoke with or without burster, expelling charge or propelling charge
- **IATA** FORBIDDEN
- **14.3 Transport hazard class(es)**
- **DOT, ADR, IMDG**
- 
- **Class** 1.4
- **Label** 1.4G

- **IATA**
- **Class** FORBIDDEN
- **Label** -
- **14.4 Packing group**
- **DOT, ADR, IMDG** II
- **IATA** FORBIDDEN
- **14.5 Environmental hazards:**
- **Marine pollutant:** No
- **14.6 Special precautions for user** Not applicable.
- **EMS Number:** F-A,S-Q
- **Segregation groups** Chlorates
- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.
- **UN "Model Regulation":** UN0303, 0303, 1.4G, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

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· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

598-62-9 manganese carbonate

D

· **IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

57-50-1 sucrose, pure

A4

7429-90-5 aluminium powder (pyrophoric)

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **Canada**

· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

598-62-9 manganese carbonate

· **Canadian Ingredient Disclosure list (limit 1%)**

100-21-0 terephthalic acid

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H201 Explosive; mass explosion hazard.
 H228 Flammable solid.
 H250 Catches fire spontaneously if exposed to air.
 H261 In contact with water releases flammable gases.
 H271 May cause fire or explosion; strong oxidiser.
 H272 May intensify fire; oxidiser.
 H302 Harmful if swallowed.
 H332 Harmful if inhaled.
 H411 Toxic to aquatic life with long lasting effects.

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Expl. 1.1: Explosives, Division 1.1
 Expl. 1.4: Explosives, Division 1.4
 Flam. Sol. 2: Flammable solids, Hazard Category 2
 Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1
 Water-react. 2: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 2

Ox. Sol. 1: Oxidising Solids, Hazard Category 1
 Ox. Sol. 2: Oxidising Solids, Hazard Category 2
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
 Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

· Sources

SDS Prepared by:
 ChemTel Inc.
 1305 North Florida Avenue
 Tampa, Florida USA 33602-2902
 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
 Website: www.chemtelinc.com