DEFENSE TECHNOLOGY

# Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date: May 29, 2013 Revision: May 29, 2013

## 1 Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
- · Trade name: OC Vapor Aerosol Grenade
- · Article number: 1056
- $\cdot$  1.2 Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

- Application of the substance / the preparation 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

#### 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: H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.



H360: May damage fertility or the unborn child



GHS01 exploding bomb

Expl. 1.4 H204 Fire or projection hazard.



GHS08 health hazard

Carc. 1B H350 May cause cancer.

Repr. 1A H360Df May damage the unborn child. Suspected of damaging fertility.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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Acute Tox. 4 H302 Harmful if swallowed.

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

🚂 T; Toxic

R45-61: May cause cancer. May cause harm to the unborn child.

Xn; Harmfu

R20/22: Harmful by inhalation and if swallowed.

🎉 E; Explosive

R2: Risk of explosion by shock, friction, fire or other sources of ignition.

K; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

#### · Information concerning particular hazards for human and environment:

Explosive/deflagrating (fast burn rate) product. Keep away from heat. Do not subject to mechanical or electrical shock. Particles from firing may be harmful if inhaled. Do not take internally. Components may harm environment.

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

#### · Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

#### · 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: H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.



H360: May damage fertility or the unborn child

The product is classified and labelled according to the CLP regulation.

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#### · Hazard pictograms



This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS).









GHS01 GHS07 GHS08 GHS09

### · Signal word Danger

#### · Hazard-determining components of labelling:

barium chromate lead chromate

Oleoresin Capsicum

potassium perchlorate

#### · Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H360Df, H411.

The following Hazard Statements are applicable only to the general GHS regulations and not the specific CLP regulation: H360.



H360: May damage fertility or the unborn child. (USA)

H204 Fire or projection hazard.

H302 Harmful if swallowed.

H350 May cause cancer.

H360Df May damage the unborn child. Suspected of damaging fertility.

H411 Toxic to aquatic life with long lasting effects.

#### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P250 Do not subject to grinding/shock/friction.

P281 Use personal protective equipment as required. P373 DO NOT fight fire when fire reaches explosives.

P372 Explosion risk in case of fire.

P308+P313 IF exposed or concerned: Get medical advice/attention.

#### · Additional information:

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children. Restricted to professional users.

#### Hazard description:

#### · WHMIS-symbols:

A - Compressed gas

D1B - Toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

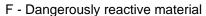
E - Corrosive material

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· NFPA ratings (scale 0 - 4)



Health = 2Fire = 0Reactivity = 3

· HMIS-ratings (scale 0 - 4)



\*2 Health = \*2 0 Fire = 0

REACTIVITY 3 Reactivity = 3

Warning: Contains lead salt(s). Long-term health hazard.

\* - Indicates a long term health hazard from repeated or prolonged exposures.

#### · HMIS Long Term Health Hazard Substances

7758-97-6 lead chromate

7778-74-7 potassium perchlorate

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Explosive Product Notice

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.

# 3 Composition/information on ingredients

- · 3.2 Mixtures
- · Description: Mixture of substances listed below with nonhazardous additions.

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· Dangerous components:		
CAS: 811-97-2 EINECS: 212-377-0	Norflurane  ♦ Press. Gas, H280	>50%
CAS: 10294-40-3 EINECS: 233-660-5 Index number: 056-002-00-7	barium chromate  Xn R20/22  ♦ Acute Tox. 4, H302; Acute Tox. 4, H332	<10%
CAS: 7439-96-5 EINECS: 231-105-1	manganese	<109
CAS: 7440-32-6 EINECS: 231-142-3	titanium F R15-17 Pyr. Sol. 1, H250; Self-heat. 1, H251; Water-react. 1, H260	<109
CAS: 7758-97-6 EINECS: 231-846-0 Index number: 082-004-00-2	lead chromate  ☐ T Carc. Cat. 2, Repr. Cat. 1, 3 R45-61; ☐ Xn R62; ☐ N R50/53 R33  ☐ Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373 ☐ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<109
CAS: 7778-74-7 EINECS: 231-912-9 Index number: 017-008-00-5	potassium perchlorate  Xn R22; → O R9  Ox. Sol. 1, H271  Acute Tox. 4, H302	<109
CAS: 8023-77-6 EINECS: 288-920-0	Oleoresin Capsicum  T R25; Xn R21; Xi R36/37/38  Acute Tox. 2, H300; Acute Tox. 3, H311 Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	2,0%

#### · SVHC

7758-97-6 lead chromate

#### · Additional information:

Equivalent to 0.70% major capsaicinoid (MC) content.

For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

### · 4.1 Description of first aid measures

#### · General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact:

Immediately rinse with water.

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.

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#### · 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

Blast injury if mishandled.

Breathing difficulty

Coughing

Dizziness

#### · Hazards

Danger of blast or crush-type injuries.

Danger of impaired breathing.

#### · 4.3 Indication of any immediate medical attention and special treatment needed

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

If necessary oxygen respiration treatment.

Later observation for pneumonia and pulmonary oedema.

## 5 Firefighting measures

#### · 5.1 Extinguishing media

#### · Suitable extinguishing agents:

Flood area with water. If no water is available, carbon dioxide, dry chemical or earth may be used. If the fire reaches the cargo, withdraw and let fire burn.

- · For safety reasons unsuitable extinguishing agents: None.
- 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.

Danger of receptacles bursting because of high vapour pressure when heated.

#### · 5.3 Advice for firefighters

#### · Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

#### · Additional information

No further relevant information available.

Evacuate area and fight fire from from the upwind side.

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.

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# 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.

Remove persons from danger area.

Ensure adequate ventilation

Protect from heat.

Isolate area and prevent access.

· 6.2 Environmental precautions:

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.

Dispose contaminated material as waste according to item 13.

· 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.

### 7 Handling and storage

#### · 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Handle with care. Avoid jolting, friction and impact.

· Information about fire - and explosion protection:

Prevent impact and friction.

Keep respiratory protective device available.

Emergency cooling must be available in case of nearby fire.

- · 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.

· Information about storage in one common storage facility:

Store away from foodstuffs.

Do not store together with oxidizing and acidic materials.

· Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· 7.3 Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

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#### · 8.1 Control parameters

orr control p	
· Ingredients v	vith limit values that require monitoring at the workplace:
811-97-2 Norflurane	
WEEL (USA)	1000 ppm
7758-97-6 lead chromate	
IOELV (EU)	2 mg/m <sup>3</sup> as Cr
REL (USA)	0,001 mg/m³ as Cr(VI), 10-hr TWA
TLV (USA)	0,05* 0,012** mg/m³ *as Pb; BEI ; **as Cr
EL (Canada)	0,05* 0,012** mg/m³ ACIGH A2, IARC 2A; R; *as Pb;**as Cr
EV (Canada)	0,012 mg/m³ as Cr
112-34-5 2-(2	-butoxyethoxy)ethanol
IOELV (EU)	Short-term value: 101,2 mg/m³, 15 ppm Long-term value: 67,5 mg/m³, 10 ppm
TLV (USA)	NIC-67,5* mg/m³, NIC-10* ppm *Inhalable fraction and vapor

- · 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.

Store protective clothing separately.

### Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

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

#### · Protection of hands:

None required for handling unused product; where possible, use protective gloves for handling spent rounds.

#### · Eye protection:



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· Body protection:

Protection may be required for spills.

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.

9 Physical and chemical prope	erties
<ul> <li>9.1 Information on basic physical a</li> <li>General Information</li> <li>Appearance:</li> </ul>	and chemical properties
Form:	Compressed gas
Colour: · Odour:	According to product specification
· Odour: · Odour threshold:	Pungent Not determined.
· pH-value:	Not determined.
· Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
· Ignition temperature:	Not determined.
· Decomposition temperature:	Not determined.
· Self-igniting:	Product is not self-igniting.
· Danger of explosion:	Risk of explosion by shock, friction, fire or other sources of ignition.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Density:	Not determined. Not determined.
<ul> <li>Relative density</li> <li>Vapour density</li> </ul>	Not determined.
· Evaporation rate	Not applicable.
Solubility in / Miscibility with water:	Not miscible or difficult to mix.
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· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

**Dynamic:** Not determined. **Kinematic:** Not determined.

• 9.2 Other information No further relevant information available.

#### 10 Stability and reactivity

- · 10.1 Reactivity
- · 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

Danger of explosion.

Danger of receptacles bursting because of high vapour pressure when heated.

Reacts with strong acids and oxidizing agents.

- 10.4 Conditions to avoid Cartridge may detonate if case is punctured or severely damaged.
- 10.5 Incompatible materials: No further relevant information available.
- · 10.6 Hazardous decomposition products:

Leadoxide vapour

Bariumoxide vapour

Toxic metal oxide smoke

Danger of forming toxic pyrolysis products.

### 11 Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity:

Acute t	Oxidity	·•
· LD/LC5	· LD/LC50 values relevant for classification:	
7758-97	7-6 lead	d chromate
Oral	LD50	12000 mg/kg (mouse)
8023-77	7-6 Ole	oresin Capsicum
Oral	LD50	47,2 mg/kg (mouse)
		3000 mg/kg (rat)
		512 mg/kg (mouse)
<b>—</b> ·		-1 -111

- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- · Sensitization: Not determined.
- · Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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Harmful

Carcinogenic.

· Repeated dose toxicity: May cause damage to organs through prolonged or repeated exposure .

### 12 Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: Toxic for aquatic organisms
- 12.2 Persistence and degradability No further relevant information available.
- · 12.3 Bioaccumulative potential May be accumulated in organism
- 12.4 Mobility in soil No further relevant information available.
- · Ecotoxical effects:
- · Remark: Toxic for fish
- · Additional ecological information:
- · General notes:

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

- · 12.5 Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

### 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.

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

14 Transport information	
· 14.1 UN-Number · DOT, ADR, IMDG, IATA	UN0301
<ul><li>14.2 UN proper shipping name</li><li>DOT, IMDG, IATA</li><li>ADR</li></ul>	Ammunition, tear-producing with burster, expelling charge or propelling charge 0301, Ammunition, tear-producing with burster, expelling charge or propelling charge,
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· 14.3 Transport hazard class(es)

· DOT



1.4 · Class

· Label 1.4G+6.1+8

· ADR, IMDG, IATA



· Class 1.4

1.4G+6.1+8 · Label

· 14.4 Packing group

· DOT, ADR, IMDG, IATA Ш

· 14.5 Environmental hazards:

· Marine pollutant: No

· Special marking (IATA):



Cargo Aircraft Only.

Not applicable. · 14.6 Special precautions for user

· EMS Number: F-A,S-Q

· 14.7 Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code Not applicable.

UN0301, 0301, ENVIRONMENTALLY HAZARDOUS, · UN "Model Regulation":

1.4G (6.1+8), II

### 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 is listed.

· Section 313 (Specific toxic chemical listings):

7439-96-5 manganese

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· TSCA (Toxic Substances Control Act):	
All ingredients are listed.	
· Proposition 65 (California):	
· Chemicals known to cause cancer:	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
Chemicals known to cause reproductive toxicity for females:	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
Chemicals known to cause reproductive toxicity for males:	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
· Chemicals known to cause developmental toxicity:	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
· Carcinogenic Categories	
· EPA (Environmental Protection Agency)	
7439-96-5 manganese	
7758-97-6 lead chromate	
7778-74-7 potassium perchlorate	
· IARC (International Agency for Research on Cancer)	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
· TLV (Threshold Limit Value established by ACGIH)	
10294-40-3 barium chromate	,
7758-97-6 lead chromate	,
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
10294-40-3 barium chromate	
7758-97-6 lead chromate	
OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed.	
· Canada	
· Canadian Domestic Substances List (DSL)	
All ingredients are listed.	
· Canadian Ingredient Disclosure list (limit 0.1%)	
10294-40-3 barium chromate	
7758-97-6 lead chromate	

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· Canadian	Ingredient Disclosure list (limit 1%)
7439-96-5	manganese
112-34-5	2-(2-butoxyethoxy)ethanol

- National regulations:
- · Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- · Other regulations, limitations and prohibitive regulations
- · Substances of very high concern (SVHC) according to REACH, Article 57

7758-97-6 lead chromate

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

#### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for

	c product features and shall not establish a legally valid contractual relationship.
· Relevant p	phrases
	Catches fire spontaneously if exposed to air.
H251	Self-heating: may catch fire.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H271	May cause fire or explosion; strong oxidiser.
	Contains gas under pressure; may explode if heated.
	Fatal if swallowed.
	Harmful if swallowed.
-	Toxic in contact with skin.
	Causes skin irritation.
	Causes serious eye irritation.
	Harmful if inhaled.
	May cause respiratory irritation.
	May cause cancer.
	May damage the unborn child. Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
R15	Contact with water liberates extremely flammable gases.
	Spontaneously flammable in air.
	Harmful by inhalation and if swallowed.
R21	Harmful in contact with skin.
	Harmful if swallowed.
_	Toxic if swallowed.
	Danger of cumulative effects.
	Irritating to eyes, respiratory system and skin.
R45	May cause cancer.

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R48 Danger of serious damage to health by prolonged exposure.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

R61 May cause harm to the unborn child. R62 Possible risk of impaired fertility.

R9 Explosive when mixed with combustible material.

#### · 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 Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

· Sources

SDS Prepared by:

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