

Safety Data Sheet

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

Printing date: August 26, 2014

Revision: August 26, 2014

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

- **1.1 Product identifier**
- **Trade name:** Defense Technology Aerial Warning / Signaling Munition CS - 300 Meters
- **Article number:** 6031CS
- **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**
Crowd Control Device
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

SECTION 2: Hazards identification

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



exploding bomb

Expl. 1.4 H204 Fire or projection hazard.



health hazard

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



Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

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



Xn; Harmful

R20/22: Harmful by inhalation and if swallowed.

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 Xn; Sensitising

R42/43: May cause sensitisation by inhalation and skin contact.

 Xi; Irritant

R36/38: Irritating to eyes and skin.

R5-44: Heating may cause an explosion. Risk of explosion if heated under confinement.

· **Information concerning particular hazards for human and 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 product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS01 GHS07 GHS08

· **Signal word** Danger

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

potassium perchlorate

[(2-chlorophenyl)methylene]malononitrile

· **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.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

H317 May cause an allergic skin reaction.

· **Precautionary statements**

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

P250 Do not subject to grinding/shock/friction.

P285 In case of inadequate ventilation wear respiratory protection.

P280 Wear eye protection / face protection.

P373 DO NOT fight fire when fire reaches explosives.

P370+P380 In case of fire: Evacuate area.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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P372 Explosion risk in case of fire.

- **Additional information:**

Can become highly flammable in use.

- **Hazard description:**

- **WHMIS-symbols:**

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

E - Corrosive material



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



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

HEALTH	2	Health = *2
FIRE	0	Fire = 0
REACTIVITY	3	Reactivity = 3

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

- **HMIS Long Term Health Hazard Substances**

7778-74-7	potassium perchlorate
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- **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.

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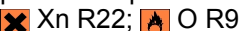
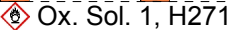
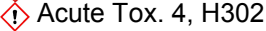

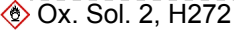

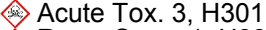








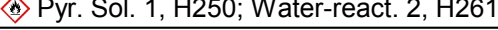

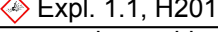
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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 7778-74-7 EINECS: 231-912-9 Index number: 017-008-00-5	potassium perchlorate   	10-25%
CAS: 7757-79-1 EINECS: 231-818-8	potassium nitrate  	10-25%
CAS: 2698-41-1 EINECS: 220-278-9	[(2-chlorophenyl)methylene]malononitrile     	2,5-10%
CAS: 7439-95-4 EINECS: 231-104-6 Index number: 012-001-00-3	magnesium powder (pyrophoric)  	2,5-10%
CAS: 7704-34-9 EINECS: 231-722-6 Index number: 016-094-00-1	sulfur  	2,5-10%
CAS: 7429-90-5 EINECS: 231-072-3 Index number: 013-001-00-6	aluminium powder (pyrophoric)  	2,5-10%
CAS: 9004-70-0 EC number: 603-037-0	Nitrocellulose, colloided, granular  	≤ 2,5%
CAS: 1309-48-4 EINECS: 215-171-9 Index number: 025-199-09-0	magnesium oxide substance with a Community workplace exposure limit	10-25%
CAS: 7631-86-9 EINECS: 231-545-4	silicon dioxide	2,5-10%

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

Notable Trace Components (≤ 0,1% w/w)

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
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
CAS: 122-39-4
EINECS: 204-539-4
Index number: 612-026-00-5

diphenylamine
 T R23/24/25;  N R50/53
R33

 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
 T R23/25;  Xn R40-48-62;  E R3;  N R50/53
R33

 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.

Take affected persons out into the fresh air.

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.

Provide oxygen treatment if affected person has difficulty breathing.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

Seek immediate medical help for blistering or open wounds.

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

Asthma attacks

Irritant to skin and mucous membranes.

Irritant to eyes.

Breathing difficulty

Coughing

Gastric or intestinal disorders when ingested.

Nausea in case of ingestion.

Allergic reactions

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- **Hazards**

Danger of impaired breathing.
 Danger of disturbed cardiac rhythm.
 Danger of pulmonary oedema.
 Danger of blast or crush-type injuries.

- **4.3 Indication of any immediate medical attention and special treatment needed**

Contains [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.
 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.

During heating or in case of fire poisonous gases are produced.

- **5.3 Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information**

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

Eliminate all ignition sources if safe to do so.

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.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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.

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· **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 item 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.
- Keep respiratory protective device available.

· **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 oxidizing 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 item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

1309-48-4 magnesium oxide

PEL (USA)	Long-term value: 15* mg/m ³ fume; *total particulate
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TLV (USA)	Long-term value: 10* mg/m ³ *as inhalable fraction
EL (Canada)	Short-term value: 10** mg/m ³ Long-term value: 10* 3** mg/m ³ *inhalable fume;**respirable dust and fume
EV (Canada)	Long-term value: 10 mg/m ³ inhalable
2698-41-1 [(2-chlorophenyl)methylene]malononitrile	
PEL (USA)	Long-term value: 0,4 mg/m ³ , 0,05 ppm
REL (USA)	Ceiling limit: 0,4 mg/m ³ , 0,05 ppm Skin
TLV (USA)	Ceiling limit: 0,39 mg/m ³ , 0,05 ppm Skin
EL (Canada)	Ceiling limit: 0,05 ppm Skin
EV (Canada)	Ceiling limit: 0,4 mg/m ³ , 0,05 ppm Skin
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 as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	Long-term value: 1* mg/m ³ as Al; *as respirable fraction
EL (Canada)	Long-term value: 1,0 mg/m ³ respirable, as Al
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 and skin.

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- **Respiratory protection:**



Respiratory protection required.

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.

- **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.

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- **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.
Risk of explosion by shock, friction, fire or other sources of ignition.
- **Explosion limits:**
 - Lower:** Not determined.
 - Upper:** Not determined.
- **Vapour pressure:** Not applicable.
- **Density:** Not determined.
- **Relative density:** Not determined.
- **Vapour density:** Not applicable.
- **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**
- **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.
Can react violently with oxygen rich (oxidizing) material. Danger of Explosion.
Reacts with flammable substances.
- **10.4 Conditions to avoid**
Store away from oxidizing 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
Toxic metal oxide smoke
Chlorine compounds

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Nitrogen oxides

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SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:**

· LD/LC50 values relevant for classification:
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2698-41-1 [(2-chlorophenyl)methylene]malononitrile

Oral LD50 178 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

- **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:

Harmful

Irritant

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):** Harmful if inhaled.

- **Repeated dose toxicity:** Repeated exposures may result in skin and/or respiratory sensitivity.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

2698-41-1 [(2-chlorophenyl)methylene]malononitrile

EC50 0,2-0,3 mg/kg (Oncorhynchus mykiss) 96 H
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- **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

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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.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**

· **DOT, ADR, IMDG**

UN0301

· **IATA**

FORBIDDEN

· **14.2 UN proper shipping name**

· **DOT, IMDG**

Ammunition Tear-producing with burster, expelling charge or propelling charge

· **ADR**

UN0301, Ammunition Tear-producing with burster, expelling charge or propelling charge, 1.4G, II

· **IATA**

FORBIDDEN

· **14.3 Transport hazard class(es)**

· **DOT**



· **Class**

1.4

· **Label**

1.4G+6.1+8

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· **ADR**

· **Class** 1.4
 · **Label** 1.4G+6.1+8

· **IMDG**

· **Class** 1.4
 · **Label** 1.4G+6.1+8

· **IATA**

· **Class** FORBIDDEN
 · **Label** FORBIDDEN
 · **14.4 Packing group**
 · **DOT, ADR, IMDG** II
 · **IATA** FORBIDDEN
 · **14.5 Environmental hazards:**
 · **Marine pollutant:** No
 · **Special marking (ADR):** Symbol (fish and tree)
 · **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 MARPOL73/78 and the IBC Code** Not applicable.
 · **UN "Model Regulation":** UN0301, Ammunition Tear-producing with burster, expelling charge or propelling charge, 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):
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None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):
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7757-79-1 potassium nitrate

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7429-90-5	aluminium powder (pyrophoric)
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· **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 is listed.

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

Present in trace quantities.

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

7778-74-7	potassium perchlorate	NL
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· **IARC (International Agency for Research on Cancer)**

7631-86-9	silicon dioxide	3
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· **TLV (Threshold Limit Value established by ACGIH)**

1309-48-4	magnesium oxide	A4
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2698-41-1	[(2-chlorophenyl)methylene]malononitrile	A4
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7429-90-5	aluminium powder (pyrophoric)	A4
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Canada**

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

All ingredients are listed.

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

None of the ingredients is listed.

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

1309-48-4	magnesium oxide
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2698-41-1	[(2-chlorophenyl)methylene]malononitrile
-----------	--

7429-90-5	aluminium powder (pyrophoric)
-----------	-------------------------------

7631-86-9	silicon dioxide
-----------	-----------------

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

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.
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· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

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

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.
 - H250 Catches fire spontaneously if exposed to air.
 - H260 In contact with water releases flammable gases which may ignite spontaneously.
 - H261 In contact with water releases flammable gases.
 - H271 May cause fire or explosion; strong oxidiser.
 - H272 May intensify fire; oxidiser.
 - H301 Toxic if swallowed.
 - H302 Harmful if swallowed.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - H400 Very toxic to aquatic life.
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- R15 Contact with water liberates extremely flammable gases.
 - R17 Spontaneously flammable in air.
 - R22 Harmful if swallowed.
 - R25 Toxic if swallowed.
 - R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
 - R38 Irritating to skin.
 - R42/43 May cause sensitisation by inhalation and skin contact.
 - R50 Very toxic to aquatic organisms.
 - R8 Contact with combustible material may cause fire.
 - 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
 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)
 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
 Expl. 1.1: Explosives, Division 1.1
 Expl. 1.4: Explosives, Division 1.4
 Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

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Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, 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. 3: Acute toxicity, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Sources

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