

# Safety Data Sheet

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

Printing date 18.04.2013

Revision: 18.04.2013

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

- **1.1 Product identifier**
- **Trade name: MODEL 6210 Canister Smoke Grenade**
- **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:**  
Combined Systems, Inc.  
388 Kinsman Rd.  
Jamestown, PA 16134  
Phone: (724) 932-2177
- **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: H411.



GHS01 exploding bomb

Expl. 1.4                      H204 Fire or projection hazard.



GHS09 environment

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



GHS07

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.



Xi; Sensitising

R43: May cause sensitisation by skin contact.



E; Explosive

R3: Extreme risk of explosion by shock, friction, fire or other sources of ignition.

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N; Dangerous for the environment

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

- **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 following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H411.

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

- **Hazard pictograms**



GHS01 GHS07 GHS09

- **Signal word** Warning

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

anthraquinone

- **Hazard statements**

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

H204 Fire or projection hazard.

H317 May cause an allergic skin reaction.

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.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P373 DO NOT fight fire when fire reaches explosives.

P372 Explosion risk in case of fire.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

- **Additional information:**

Contains anthraquinone. May produce an allergic reaction.

Can become highly flammable in use.

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- **Hazard description:**
- **WHMIS-symbols:**  
F - Dangerously reactive material



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



Health = 2  
Fire = 2  
Reactivity = 3

This substance possesses oxidizing properties.

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



Health = 2  
Fire = 0  
Reactivity = 3

- **HMIS Long Term Health Hazard Substances**

None of the ingredients is listed.

- **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: 84-65-1<br>EINECS: 201-549-0                                  | anthraquinone<br>Xi R43<br>Skin Sens. 1, H317  | 25-50% |
| CAS: 3811-04-9<br>EINECS: 223-289-7<br>Index number: 017-004-00-3  | potassium chlorate<br>Xn R20/22;  O R9;  N R51/53<br>Ox. Sol. 1, H271<br>Aquatic Chronic 2, H411<br>Acute Tox. 4, H302; Acute Tox. 4, H332 | 20-40% |
| CAS: 57-50-1<br>EINECS: 200-334-9                                  | sucrose, pure<br>substance with a Community workplace exposure limit   | 10-25% |
| CAS: 7757-79-1<br>EINECS: 231-818-8                                | potassium nitrate<br>O R8<br>Ox. Sol. 2, H272  | <10%   |
| CAS: 7760-50-1   | Magnesium Carbonate<br>Xn R22;  Xi R36/37/38<br>Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319;<br>STOT SE 3, H335            | <10%   |
| CAS: 7440-21-3<br>EINECS: 231-130-8                                | silicon<br>substance with a Community workplace exposure limit<br>Flam. Sol. 2, H228   | <10%   |
| CAS: 9004-70-0<br>EC number: 603-037-0                             | Nitrocellulose, colloided, granular<br>E R1-3<br>Unst. Expl., H200   | <10%   |
| CAS: 10294-40-3<br>EINECS: 233-660-5<br>Index number: 056-002-00-7 | barium chromate<br>Xn R20/22<br>Acute Tox. 4, H302; Acute Tox. 4, H332   | <1,0%  |

**· Additional information:** For the wording of the listed risk phrases refer to section 16.**· Notable Trace Components (< 0.1% w/w)**

|   |   |
|---|---|
| CAS: 592-87-0<br>EINECS: 209-774-6<br>Index number: 082-001-00-6  | lead dithiocyanate<br>T Repr. Cat. 1, 3 R61;  Xn R62-20/22;  N R50/53<br>R33<br>Repr. 1A, H360Df; STOT RE 2, H373<br>Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br>Acute Tox. 4, H302; Acute Tox. 4, H332 |
| CAS: 7440-02-0<br>EINECS: 231-111-4<br>Index number: 028-002-00-7 | nickel<br>T R48/23;  Xn R40;  Xi R43<br>Carc. Cat. 3<br>Carc. 2, H351; STOT RE 1, H372<br>Skin Sens. 1, H317  |

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## 4 First aid measures

### · 4.1 Description of first aid measures

#### · **General information:**

Immediately remove any clothing soiled by the product.

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:**

Clean with water and soap.

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

Asthma attacks

Blast injury if mishandled.

Allergic reactions

Breathing difficulty

Dizziness

Coughing

#### · **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.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

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

Later observation for pneumonia and pulmonary oedema.

## 5 Firefighting measures

### · 5.1 Extinguishing media

#### · **Suitable extinguishing agents:**

CO<sub>2</sub>, 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

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.

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- **Additional information**

Eliminate all ignition sources if safe to do so.

Cool endangered receptacles with water spray.

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.

## 6 Accidental release measures

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

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

Wear protective equipment. Keep unprotected persons away.

Isolate area and prevent access.

Protect from heat.

- **6.2 Environmental precautions:**

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

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

- **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.

- **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**

Handle with care. Avoid jolting, friction and impact.

Keep away from heat and direct sunlight.

- **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.

Store away from flammable substances.

Do not store together with oxidizing and acidic materials.

- **Further information about storage conditions:**

Store in dry conditions.

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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.

· **8.1 Control parameters**

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

### 57-50-1 sucrose, pure

|             |  |
|-------------|--|
| PEL (USA)   | 15* 5** mg/m <sup>3</sup><br>*total dust **respirable fraction |
| REL (USA)   | 10* 5** mg/m <sup>3</sup><br>*total dust **respirable fraction |
| TLV (USA)   | 10 mg/m <sup>3</sup>   |
| EL (Canada) | 10 mg/m <sup>3</sup>   |
| EV (Canada) | 10 mg/m <sup>3</sup><br>total dust                             |

### 7440-21-3 silicon

|             |  |
|-------------|--|
| PEL (USA)   | 15* 5** mg/m <sup>3</sup><br>*total dust **respirable fraction |
| REL (USA)   | 10* 5** mg/m <sup>3</sup><br>*total dust **respirable fraction |
| TLV (USA)   | TLV withdrawn  |
| EL (Canada) | 10 mg/m <sup>3</sup>   |
| EV (Canada) | 10 mg/m <sup>3</sup><br>total dust                             |

· **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:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

· **Respiratory protection:**



Combined Organic Vapor and Particulate Respirator is recommended for use during all processing activities.

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- **Protection of hands:**



Protective gloves

- **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.

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

Not required under normal conditions of use.

- **Limitation and supervision of exposure into the environment**

No further relevant information available.

- **Risk management measures**

Organizational measures should be in place for all activities involving this product.

See Section 7 for additional information.

No further relevant information available.

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Solid material

Colour: Grey

- **Odour:** Odourless

- **Odour threshold:** Not determined.

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

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

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|  |  |
|--|--|
| · <b>Flammability (solid, gaseous):</b>  | Not determined.  |
| · <b>Ignition temperature:</b>   | Not determined.  |
| · <b>Decomposition temperature:</b>  | Not determined.  |
| · <b>Self-igniting:</b>  | Product is not self-igniting.  |
| · <b>Danger of explosion:</b>  | Extreme risk of explosion by shock, friction, fire or other sources of ignition. |
| · <b>Explosion limits:</b><br><b>Lower:</b><br><b>Upper:</b>   | Not determined.<br>Not determined.   |
| · <b>Vapour pressure:</b>  | Not applicable.  |
| · <b>Density:</b><br>· <b>Relative density</b><br>· <b>Vapour density</b><br>· <b>Evaporation rate</b> | Not determined.<br>Not determined.<br>Not applicable.<br>Not applicable.         |
| · <b>Solubility in / Miscibility with water:</b>   | Insoluble.   |
| · <b>Partition coefficient (n-octanol/water):</b>  | Not determined.  |
| · <b>Viscosity:</b><br><b>Dynamic:</b><br><b>Kinematic:</b>  | Not applicable.<br>Not applicable.   |
| · <b>Solvent content:</b><br><b>Organic solvents:</b><br>· <b>9.2 Other information</b>                | Not determined.<br>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.  
Acts as an oxidizing agent on organic materials such as wood, paper and fats.  
Reacts with reducing agents.  
Reacts with acids.  
Contact with acids releases toxic gases.  
Reacts with strong alkali.  
Toxic fumes may be released if heated above the decomposition point.
- **10.4 Conditions to avoid**  
Keep ignition sources away - Do not smoke.

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Keep away from heat and direct sunlight.

- **10.5 Incompatible materials:** Contact with acids liberates toxic gases.

- **10.6 Hazardous decomposition products:**

Chlorine

Hydrogen chloride (HCl)

Carbon monoxide

Toxic metal oxide smoke

Nitrogen oxides

Irritant gases/vapours

## 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) |
|------|------|------------------|

**7757-79-1 potassium nitrate**

|      |      |                  |
|------|------|------------------|
| Oral | LD50 | 3750 mg/kg (rat) |
|------|------|------------------|

- **Primary irritant effect:**

- **on the skin:** Slight irritant effect on skin and mucous membranes.

- **on the eye:** Slight irritant effect on eyes.

- **Sensitization:**

Sensitization possible through skin contact.

Sensitizing effect through inhalation is possible by prolonged exposure.

- **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

- **Sensitisation:** Sensitization possible by skin contact.

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

## 12 Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** The product contains materials that are harmful to the environment.

- **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.

- **Ecotoxicological effects:**

- **Remark:** Harmful to fish

- **Additional ecological information:**

- **General notes:**

This statement was deduced from the properties of the single components.

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The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.

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

· **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.

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

· **Uncleaned packaging:**

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

## 14 Transport information

· **14.1 UN-Number**

· **DOT, ADR, IMDG, IATA** UN0303

· **14.2 UN proper shipping name**

· **DOT, IMDG, IATA** Ammunition, Smoke  
· **ADR** 0303 Ammunition, Smoke

· **14.3 Transport hazard class(es)**

· **DOT, IATA**



· **Class** 1.4  
· **Label** 1.4G

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## · ADR, IMDG



|  |                              |
|--|------------------------------|
| · Class  | 1.4                          |
| · Label  | 1.4G                         |
| · 14.4 Packing group   |                              |
| · DOT, ADR, IMDG, IATA   | II                           |
| · 14.5 Environmental hazards:  |                              |
| · Marine pollutant:  | No<br>Symbol (fish and tree) |
| · 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":   | UN0303, 0303, 1.4G, 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):

7440-02-0 | nickel

## · TSCA (Toxic Substances Control Act):

All ingredients are listed.

## · Proposition 65 (California):

## · Chemicals known to cause cancer:

10294-40-3 | barium chromate

7440-02-0 | nickel

84-65-1 | anthraquinone

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

10294-40-3 | barium chromate

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

|            |                 |
|------------|-----------------|
| 10294-40-3 | barium chromate |
|------------|-----------------|

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

Present in trace quantities: 7439-92-1.

|            |                 |
|------------|-----------------|
| 10294-40-3 | barium chromate |
|------------|-----------------|

|           |      |
|-----------|------|
| 7439-92-1 | lead |
|-----------|------|

**· Carcinogenic Categories**
**· EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

|            |                 |   |
|------------|-----------------|---|
| 10294-40-3 | barium chromate | 1 |
|------------|-----------------|---|

|           |        |   |
|-----------|--------|---|
| 7440-02-0 | nickel | 1 |
|-----------|--------|---|

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

|         |               |    |
|---------|---------------|----|
| 57-50-1 | sucrose, pure | A4 |
|---------|---------------|----|

|            |                 |    |
|------------|-----------------|----|
| 10294-40-3 | barium chromate | A1 |
|------------|-----------------|----|

|           |        |    |
|-----------|--------|----|
| 7440-02-0 | nickel | A5 |
|-----------|--------|----|

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

|            |                 |
|------------|-----------------|
| 10294-40-3 | barium chromate |
|------------|-----------------|

|           |        |
|-----------|--------|
| 7440-02-0 | nickel |
|-----------|--------|

**· 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 |
|------------|-----------------|

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

None of the ingredients is listed.

**· 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 any specific product features and shall not establish a legally valid contractual relationship.

**· Relevant phrases**

H200 Unstable explosives.

H228 Flammable solid.

H271 May cause fire or explosion; strong oxidiser.

H272 May intensify fire; oxidiser.

H302 Harmful if swallowed.

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H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H411 Toxic to aquatic life with long lasting effects.

R1 Explosive when dry.  
R20/22 Harmful by inhalation and if swallowed.  
R22 Harmful if swallowed.  
R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R43 May cause sensitisation by skin contact.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
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  
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**

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