# 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 Black Colored Smoke 100 Meters
- · Article number: 6483BK
- 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.



health hazard

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

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.

(Cont'd. on page 2)

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

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(Cont'd. from page 1)

### · Hazard pictograms





- · Signal word Danger
- · Hazard-determining components of labelling:

tetrasodium 4-amino-5-hydroxy-3,6-bis[[4-[[2-(sulphonatooxy)ethyl]sulphonyl]phenyl]azo]naphthalene-2,7disulphonate

· 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.

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

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.

P285 In case of inadequate ventilation wear respiratory protection.

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

P280 Wear eye protection / face protection.

DO NOT fight fire when fire reaches explosives. P373

P370+P380 In case of fire: Evacuate area.

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

Explosion risk in case of fire. P372

#### Additional information:

Can become highly flammable in use.

NFPA ratings (scale 0 - 4)



Health = 2 Fire = 3Reactivity = 4

### · HMIS-ratings (scale 0 - 4)



\*2 Health = \*2 3 Fire = 3 REACTIVITY 4 Reactivity = 4

### 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.

(Cont'd. on page 3)

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

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### (Cont'd. from page 2)

### 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.

## **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	20-40%		
CAS: 100-21-0 EINECS: 202-830-0	terephthalic acid substance with a Community workplace exposure limit			
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	5-10%		
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%		
CAS: 17095-24-8 EINECS: 241-164-5	tetrasodium 4-amino-5-hydroxy-3,6-bis[[4-[[2-(sulphonatooxy) ethyl]sulphonyl]phenyl]azo]naphthalene-2,7-disulphonate  Resp. Sens. 1, H334	10-20%		

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

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

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	(Cont'd. from page 3)
· Notable Trace Components	s (≤ 0,1% w/w)
CAS: 122-39-4	diphenylamine
EINECS: 204-539-4 Index number: 612-026-00-5	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.

Supply fresh air or oxygen; call for doctor.

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

Provide oxygen treatment if affected person has difficulty breathing.

In case of unconsciousness place patient stably in side position for transportation.

#### · After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation is experienced, 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

Coughing

Slight irritant effect on eyes.

Breathing difficulty

#### · Hazards

Danger of blast or crush-type injuries.

Danger of impaired breathing.

Danger of pulmonary oedema.

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

Contains tetrasodium 4-amino-5-hydroxy-3,6-bis[[4-[[2-(sulphonatooxy)ethyl]sulphonyl]phenyl]azo] naphthalene-2,7-disulphonate. May produce an allergic reaction.

Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.

If necessary oxygen respiration treatment.

(Cont'd. on page 5)

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

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(Cont'd. from page 4)

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.

- 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.

(Cont'd. on page 6)

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

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(Cont'd. from page 5)

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.

- · 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 v	with limit values that require monitoring at the workplace:		
100-21-0 tere	phthalic acid		
TLV (USA)	Long-term value: 10 mg/m³		
EL (Canada)	Long-term value: 10 mg/m³		
EV (Canada)	Long-term value: 10 mg/m³		
57-50-1 sucre	57-50-1 sucrose, pure		
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction		
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction		
TLV (USA)	Long-term value: 10 mg/m³		
EL (Canada)	Long-term value: 10 mg/m³		
EV (Canada)	Long-term value: 10 mg/m³ total dust		
	(Cont'd. on page 7)		

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

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		(Cont'd. from page
	nganese carbonate	
PEL (USA)	Ceiling limit: 5 mg/m³ as Mn	
REL (USA)	Short-term value: 3 mg/m³ Long-term value: 1 mg/m³ as Mn	
TLV (USA)	Long-term value: 0,02* 0,1* mg/m³ as Mn; *respirable **inhalable fraction	
EL (Canada)	Long-term value: 0,2 mg/m³ as Mn; R	
7440-21-3 sil	icon	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction	
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction	
TLV (USA)	TLV withdrawn	
EL (Canada)	Long-term value: 10 mg/m³	
EV (Canada)	Long-term value: 10 mg/m³ total dust	
7429-90-5 alu	ıminium powder (pyrophoric)	
PEL (USA)	Long-term value: 15*; 15** mg/m³ *Total dust; ** Respirable fraction	
REL (USA)	Long-term value: 10* 5** mg/m³ *Total dust **Respirable fraction	
TLV (USA)	Long-term value: 1* mg/m³ as Al; *as respirable fraction	
EL (Canada)	Long-term value: 1,0 mg/m³ metal and insoluble compdounds, respirable	
EV (Canada)	Long-term value: 5 mg/m³ 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.

(Cont'd. on page 8)

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

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(Cont'd. from page 7)

· Respiratory protection:



Respiratory protection required.

· 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: OdourlessOdour threshold: Not determined.pH-value: Not applicable.

· Change in condition

Melting point/Melting range:
Boiling point/Boiling range:
Undetermined.

Flash point:
Flammability (solid, gaseous):

Auto/Self-ignition temperature:
Not Determined.
Undetermined.
Not determined.

(Cont'd. on page 9)

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

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(Cont'd. from page 8)

• **Decomposition temperature:** Not determined.

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

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

· Explosion limits:

Lower:
Upper:
Not determined.
Not determined.

Vapour pressure:
Not applicable.

Density:
Not determined.
Relative density
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 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

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

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(Cont'd. from page 9)

## **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)

- 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

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

· 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 cansister 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.
- Repeated dose toxicity:

Causes damage to organs through prolonged or repeated exposure.

Repeated exposures may result in skin and/or respiratory sensitivity.

- · CMR effects (carcinogenity, 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.
- · Ecotoxical 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.

(Cont'd. on page 11)

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

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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.

UN0303

**FORBIDDEN** 

**FORBIDDEN** 

1.4G

charge or propelling charge

expelling charge or propelling charge

Ammunition Smoke with or without burster, expelling

0303, 1.4G, Ammunition Smoke with or without burster,

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

## **SECTION 14: Transport information**

· 14.1 UN-Number

· DOT, ADR, IMDG ·IATA

· 14.2 UN proper shipping name

· DOT, IMDG

· 14.3 Transport hazard class(es)

· DOT, ADR, IMDG

1.4 · Class

· Label · IATA

· ADR

·IATA

· Class **FORBIDDEN** 

· Label

· 14.4 Packing group

· DOT, ADR, IMDG

·IATA **FORBIDDEN** 

(Cont'd. on page 12)

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

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Trade name: Defense Technology 40MM Ground Marker Black Colored Smoke - 100 Meters

(Cont'd. from page 11)

· 14.5 Environmental hazards:

· Marine pollutant: No

14.6 Special precautions for user
 EMS Number:
 Segregation groups
 Not applicable.
 F-A,S-Q
 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/legis	s		

- · 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 are listed.

· 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

A4

A4

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
7429-90-5 aluminium powder (pyrophoric)

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

None of the ingredients are listed.

(Cont'd. on page 13)

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

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(Cont'd. from page 12)

· 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.

### **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.

H334 May cause allergy or asthma symptoms or breathing difficulties 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)

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

Flam. Sol. 2: Flammable solids, Hazard Category 2

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Pyr. Sol. 1: Pyorphoric 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

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

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

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