

## LIGHT-SMOKE SIGNAL

**WesCom Signal and Rescue Germany GmbH**

Chemwatch: 65-6269

Version No: 5.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

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L.GHS.U.S.A.EN

### SECTION 1 IDENTIFICATION

#### Product Identifier

Product name	LIGHT-SMOKE SIGNAL
Synonyms	Comet Light and smoke signal: Art.-No. 9181600, Pains Wessex Manoverboard MK9: Art.-No. 9537800
Proper shipping name	Signals, smoke
Other means of identification	Not Available

#### Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions. Sea distress signal. Compact Lifebuoy Marker is normally mounted on a ships bridge wing attached to a 4 kg lifebuoy. It is automatically or manually deployed to mark the position of a person in the water by day or night.
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#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	WesCom Signal and Rescue Germany GmbH
Address	Vieländer Weg 147 Bremerhaven 27574 Germany
Telephone	+49 471 3930
Fax	+49 471 3932 10
Website	www.wescomsignal.com
Email	info@wescomsignal.com

#### Emergency phone number

Association / Organisation	Consultant Lutz Harder GmbH
Emergency telephone numbers	+49 178 433 7434
Other emergency telephone numbers	Not Available

### SECTION 2 HAZARD(S) IDENTIFICATION

#### Classification of the substance or mixture

Classification	Explosive Division 1.4, Eye Irritation Category 2B
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#### Label elements

Hazard pictogram(s)	
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SIGNAL WORD	WARNING
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#### Hazard statement(s)

H204	Fire or projection hazard.
H320	Causes eye irritation.

#### Hazard(s) not otherwise specified

Not Applicable

#### Precautionary statement(s) Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P250	Do not subject to grinding/shock/sources of friction.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P240	Ground/bond container and receiving equipment.

**Precautionary statement(s) Response**

P370+P380	In case of fire: Evacuate area.
P372	Explosion risk in case of fire.
P374	Fight fire with normal precautions from a reasonable distance.
P373	DO NOT fight fire when fire reaches explosives.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

**Precautionary statement(s) Storage**

P401	Store according to local regulations for explosives.
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**Precautionary statement(s) Disposal**

P501	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
		device contains
		polytechnic materials of;
3811-04-9		<u>potassium chlorate</u>
7757-79-1		<u>potassium nitrate</u>
10022-31-8		<u>barium nitrate</u>
		and lithium batteries

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 FIRST-AID MEASURES****Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Not considered a normal route of entry.</li> <li>▶ If swallowed do NOT induce vomiting.</li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

**Most important symptoms and effects, both acute and delayed**

See Section 11

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

Treat symptomatically.

**SECTION 5 FIRE-FIGHTING MEASURES****Extinguishing media**

DANGER: Deliver media remotely.

- ▶ For minor fires: Flooding quantities only.
- ▶ For large fires: Do not attempt to extinguish.

Apply by mechanical means only.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	Avoid contact with other chemicals.
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**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	<p><b>WARNING: EXPLOSIVE MATERIALS / ARTICLES PRESENT!</b></p> <ul style="list-style-type: none"> <li>▶ Evacuate all personnel and move upwind.</li> <li>▶ Prevent re-entry.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May detonate and burning material may be propelled from fire.</li> <li>▶ Wear full-body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage and fire effluent from entering drains and water courses.</li> <li>▶ Fight fire from safe distances and from protected locations.</li> <li>▶ Use flooding quantities of water.</li> <li>▶ <b>DO NOT</b> approach containers or packages suspected to be hot.</li> <li>▶ Cool any exposed containers not involved in fire from a protected location.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
<b>Fire/Explosion Hazard</b>	Division 1.4 Substances, mixtures and articles which present no significant hazard: substances, mixtures and articles which present only a small hazard in the event of ignition or initiation. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package.

**SECTION 6 ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<p><b>WARNING!: EXPLOSIVE.</b> <b>BLAST and/or PROJECTION and/or FIRE HAZARD</b></p> <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid inhalation of the material and avoid contact with eyes and skin.</li> <li>▶ Wear impervious gloves and safety glasses.</li> <li>▶ Remove all ignition sources.</li> <li>▶ Use spark-free tools when handling.</li> <li>▶ Sweep into non-sparking containers or barrels and moisten with water.</li> <li>▶ Place spilled material in clean, sealable, labelled container for disposal.</li> <li>▶ Flush area with large amounts of water.</li> </ul>
<b>Major Spills</b>	<p><b>WARNING!: EXPLOSIVE.</b></p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Consider evacuation (or protect in place).</li> <li>▶ In case of transport accident notify Police, Emergency Authority, Competent Explosives Authority or Manufacturer.</li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Use extreme caution to prevent physical shock.</li> <li>▶ Use only spark-free shovels and explosion-proof equipment.</li> <li>▶ Collect recoverable material and segregate from spilled material.</li> <li>▶ Wash spill area with large quantities of water.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 HANDLING AND STORAGE****Precautions for safe handling**

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Handle gently. Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Avoid smoking, naked lights, heat or ignition sources.</li> <li>▶ Explosives must not be struck with metal implements.</li> <li>▶ Avoid mechanical and thermal shock and friction.</li> <li>▶ Use in a well ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling <b>DO NOT</b> eat, drink or smoke.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store cases in a well ventilated magazine licensed for the appropriate Class, Division and Compatibility Group.</li> <li>▶ Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Store in a cool place in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights, heat or ignition sources.</li> <li>▶ Store in an isolated area away from other materials.</li> <li>▶ Keep storage area free of debris, waste and combustibles.</li> </ul>

Continued...

**LIGHT-SMOKE SIGNAL**

- ▶ Protect containers against physical damage.
  - ▶ Check regularly for spills and leaks
- NOTE:** If explosives need to be destroyed contact the Competent Authority.
- ▶ Store away from incompatible materials.
- Keep out of reach of children.

**Conditions for safe storage, including any incompatibilities**

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods.</li> <li>▶ Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore on the assignment to a particular division</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.</li> <li>▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.</li> <li>▶ Explosion hazard may follow contact with incompatible materials</li> </ul>

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	barium nitrate	Barium dinitrate, Barium(II) nitrate (1:2), Barium salt of nitric acid	0.5 mg/m3	Not Available	Not Available	[*Note: The REL also applies to other soluble barium compounds (as Ba) except Barium sulfate.]
US ACGIH Threshold Limit Values (TLV)	barium nitrate	Barium and soluble compounds, as Ba(1990)	0.5 mg/m3	Not Available	Not Available	TLV® Basis: Eye, skin, & GI irr; muscular stim
US OSHA Permissible Exposure Levels (PELs) - Table Z1	barium nitrate	Barium, soluble compounds	0.5 mg/m3	Not Available	Not Available	(as Ba)


**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium chlorate	Potassium chlorate	5.6 mg/m3	62 mg/m3	370 mg/m3
potassium nitrate	Potassium nitrate	9 mg/m3	100 mg/m3	600 mg/m3
barium nitrate	Barium nitrate	2.9 mg/m3	350 mg/m3	2,100 mg/m3

Ingredient	Original IDLH	Revised IDLH
potassium chlorate	Not Available	Not Available
potassium nitrate	Not Available	Not Available
barium nitrate	50 mg/m3	Not Available

**MATERIAL DATA**

**Exposure controls**

<b>Appropriate engineering controls</b>	<p>Engineering controls for explosive articles are designed to reduce or eliminate fragmentation and/or blast effects either by suppression of the source of detonation or by protection at the exposed location, or both. Barricades, shields, contained detonation chambers, and "zero quantity-distance (Q-D)" magazines are examples of engineering controls.</p> <p>Engineering controls are designed and tested in a rigorous fashion. The construction of the engineering control must be carefully duplicated in field applications to assure it will function properly.</p> <p>It is thus imperative that engineering controls be built exactly in accordance with the design package, and that they be used only for the articles (e.g.munitions) for which they are authorised.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Fire resistant/ heat resistant gloves where practical, otherwise</li> <li>▶ Heavy-duty chemically resistant gloves capable of providing short-term protection against spontaneous ignition.</li> <li>▶ Safety footwear</li> </ul> <p>Hard hat  Ear Protection.</p>
<b>Thermal hazards</b>	Not Available

**Respiratory protection**

Respiratory protection not normally required due to the physical form of the product.

LIGHT-SMOKE SIGNAL

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Orange/yellow outer metal casing pressed with black/grey polytechnical ingredients.		
Physical state	Manufactured	Relative density (Water = 1)	Not Applicable
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	>160
Melting point / freezing point (°C)	Not Applicable	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	160	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>▶ Presence of shock and friction</li> <li>▶ Presence of heat source and ignition source</li> <li>▶ Product is considered stable under normal handling conditions.</li> <li>▶ Stable under normal storage conditions.</li> <li>▶ Hazardous polymerization will not occur.</li> </ul> Avoid contact with other chemicals.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Not normally a hazard due to physical form of product. Inhalation of vapour is more likely at higher than normal temperatures. The vapour is discomforting	
Ingestion	Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments	
Skin Contact	Not normally a hazard due to physical form of product. The vapour is discomforting	
Eye	Not normally a hazard due to physical form of product. The vapour is discomforting	
Chronic	▶ Generally not applicable.	
LIGHT-SMOKE SIGNAL	TOXICITY	IRRITATION
	Not Available	Not Available
potassium chlorate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup> Oral (rat) LD50: 1870 mg/kg <sup>[2]</sup>	Not Available
potassium nitrate	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg <sup>[1]</sup> Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Not Available

LIGHT-SMOKE SIGNAL

barium nitrate	TOXICITY	IRRITATION
	Oral (rat) LD50: 355 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg/24h - moderate Skin (rabbit): 500 mg/24h - mild
<b>Legend:</b> 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances		

**BARIUM NITRATE**  
The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

Acute Toxicity	☐	Carcinogenicity	☐
Skin Irritation/Corrosion	☐	Reproductivity	☐
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	☐
Respiratory or Skin sensitisation	☐	STOT - Repeated Exposure	☐
Mutagenicity	☐	Aspiration Hazard	☐

**Legend:**  
 ✗ - Data available but does not fill the criteria for classification  
 ✓ - Data available to make classification  
 ☐ - Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
LIGHT-SMOKE SIGNAL	Not Available	Not Available	Not Available	Not Available	Not Available
potassium chlorate	LC50	96	Fish	=13000mg/L	1
	EC50	72	Algae or other aquatic plants	1.9mg/L	4
	NOEC	72	Algae or other aquatic plants	<0.5mg/L	4
potassium nitrate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	22.5mg/L	4
barium nitrate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>3.5mg/L	2
	EC50	72	Algae or other aquatic plants	>1.92mg/L	2
	NOEC	72	Algae or other aquatic plants	>=1.92mg/L	2
<b>Legend:</b> Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data					

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
potassium chlorate	HIGH	HIGH
potassium nitrate	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
potassium chlorate	LOW (LogKOW = -4.6296)
potassium nitrate	LOW (LogKOW = 0.209)

Mobility in soil

Ingredient	Mobility
potassium chlorate	LOW (KOC = 35.04)
potassium nitrate	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

**LIGHT-SMOKE SIGNAL**

**Waste treatment methods**

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Explosives must not be thrown away, buried, discarded or placed with garbage.</li> <li>▶ Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be notified.</li> <li>▶ This material may be disposed of by burning or detonation but the operation may only be performed under the control of a person trained in the safe destruction of explosives.</li> </ul> <p>Refer to local Waste Disposal Authority and supplier for suitable disposal procedure.</p>
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**SECTION 14 TRANSPORT INFORMATION**

**Labels Required**

	
<b>Marine Pollutant</b>	NO

**Land transport (DOT)**

<b>UN number</b>	0507	
<b>UN proper shipping name</b>	Signals, smoke	
<b>Transport hazard class(es)</b>	<b>Class</b>	1.4S
	<b>Subrisk</b>	Not Applicable
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	<b>Hazard Label</b>	1.4S
	<b>Special provisions</b>	Not Applicable

**Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	0507	
<b>UN proper shipping name</b>	Signals, smoke	
<b>Transport hazard class(es)</b>	<b>ICAO/IATA Class</b>	1.4S
	<b>ICAO / IATA Subrisk</b>	Not Applicable
	<b>ERG Code</b>	3L
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	<b>Special provisions</b>	Not Applicable
	<b>Cargo Only Packing Instructions</b>	135
	<b>Cargo Only Maximum Qty / Pack</b>	100 kg
	<b>Passenger and Cargo Packing Instructions</b>	135
	<b>Passenger and Cargo Maximum Qty / Pack</b>	25 kg
	<b>Passenger and Cargo Limited Quantity Packing Instructions</b>	Forbidden
	<b>Passenger and Cargo Limited Maximum Qty / Pack</b>	Forbidden

**Sea transport (IMDG-Code / GGVSee)**

<b>UN number</b>	0507	
<b>UN proper shipping name</b>	SIGNALS, SMOKE	
<b>Transport hazard class(es)</b>	<b>IMDG Class</b>	1.4S
	<b>IMDG Subrisk</b>	Not Applicable
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	<b>EMS Number</b>	F-B, S-X
	<b>Special provisions</b>	Not Applicable
	<b>Limited Quantities</b>	0

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15 REGULATORY INFORMATION**

**LIGHT-SMOKE SIGNAL**

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**POTASSIUM CHLORATE(3811-04-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- US - Massachusetts - Right To Know Listed Chemicals
- US - Pennsylvania - Hazardous Substance List
- US - Rhode Island Hazardous Substance List

- US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**POTASSIUM NITRATE(7757-79-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- US - Massachusetts - Right To Know Listed Chemicals
- US - Pennsylvania - Hazardous Substance List
- US - Rhode Island Hazardous Substance List
- US EPCRA Section 313 Chemical List

- US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**BARIUM NITRATE(10022-31-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- US - Alaska Limits for Air Contaminants
- US - California Permissible Exposure Limits for Chemical Contaminants
- US - Hawaii Air Contaminant Limits
- US - Idaho - Limits for Air Contaminants
- US - Massachusetts - Right To Know Listed Chemicals
- US - Michigan Exposure Limits for Air Contaminants
- US - Minnesota Permissible Exposure Limits (PELs)
- US - Oregon Permissible Exposure Limits (Z-1)
- US - Pennsylvania - Hazardous Substance List
- US - Rhode Island Hazardous Substance List
- US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
- US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants

- US - Washington Permissible exposure limits of air contaminants
- US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
- US ACGIH Threshold Limit Values (TLV)
- US ACGIH Threshold Limit Values (TLV) - Carcinogens
- US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
- US EPA Carcinogens Listing
- US EPCRA Section 313 Chemical List
- US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Levels (PELs) - Table Z1
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
- US TSCA Chemical Substance Inventory - Interim List of Active Substances

**Federal Regulations**

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	Yes
Reactivity hazard	No

**US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)**

None Reported

**State Regulations**

**US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (barium nitrate; potassium chlorate; potassium nitrate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**SECTION 16 OTHER INFORMATION**

**Other information**

**Ingredients with multiple cas numbers**

Name	CAS No
barium nitrate	10022-31-8, 34053-87-7

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

Continued...


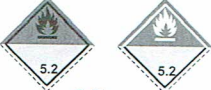











The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

#### Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average  
PC – STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index



(Grote) gevaarsetiketten	Gevaarseigenschappen	Aanvullende aanwijzingen
(1)	(2)	(3)
Oxiderende stoffen  5.1	Gevaar van ontsteking en explosie Gevaar van heftige reactie in contact met brandbare stoffen.	Vermijd vermenging met ontvlambare of brandbare stoffen (bijv. zaagsel).
Organische peroxiden  5.2	Gevaar van exotherme ontleding bij hoge temperaturen, in contact met andere stoffen (zoals zuren, verbindingen van zware metalen of aminen), wrijving of stoot. Dit kan leiden tot ontwikkeling van schadelijke en brandbare gassen of dampen.	Vermijd vermenging met ontvlambare of brandbare stoffen (bijv. zaagsel).
Giftige stoffen  6.1	Vergiftigingsgevaar Gevaar voor het aquatisch milieu en het rioleringsstelsel.	Gebruik vluchtmasker voor noodgevallen.
Infectueuze (besmettelijke) stoffen  6.2	Besmettingsgevaar Gevaar voor het aquatisch milieu en het rioleringsstelsel.	
Radioactieve stoffen  7A  7B  7C  7D	Gevaar van opname en externe straling.	Tijdsduur van blootstelling beperken.
Splijtbare stoffen  7E	Gevaar van een nucleaire kettingreactie.	
Bijtende stoffen  8	Gevaar van verbranding Kunnen onderling, met water en met andere stoffen heftig reageren. Gevaar voor het aquatisch milieu en het rioleringsstelsel.	Verhinder dat vrijkomende stoffen in het aquatisch milieu of het rioleringsstelsel terechtkomen.
Diverse gevaarlijke stoffen en voorwerpen  9	Gevaar van verbranding Brandgevaar Explosiegevaar Gevaar voor het aquatisch milieu en het rioleringsstelsel.	Verhinder dat vrijkomende stoffen in het aquatisch milieu of het rioleringsstelsel terechtkomen.

**Opmerking 1:** Voor gevaarlijke goederen met diverse gevaren en voor gemengde ladingen moet elke rubriek die van toepassing is, in acht worden genomen.

**Opmerking 2:** De aanvullende aanwijzingen hierboven mogen worden aangepast om rekening te houden met de klassen van de te vervoeren gevaarlijke goederen en hun vervoermiddelen.

**Uitrusting voor persoonlijke en algemene bescherming voor het uitvoeren van algemene maatregelen of gevaarspecifieke noodmaatregelen, die aan boord van het voertuig meegevoerd moeten worden, in overeenstemming met sectie 8.1.5 van het ADR.**

De volgende uitrusting moet aan boord van de transporteenheid worden meegevoerd voor alle gevaarsetiketnummers:

- voor elk voertuig, een stopblok (wielkeg) van een grootte die past bij de maximale massa van het voertuig en de diameter van het wiel;
- twee zelfstandig staande waarschuwingssignalen;
- vloeistof om de ogen te spoelen <sup>a</sup>; en

voor elk lid van de bemanning

- een veiligheidsvest (bijv. zoals beschreven in de norm EN 471);
- een draagbaar verlichtingsapparaat;
- een paar beschermende handschoenen; en
- bescherming voor de ogen (bijv. een veiligheidsbril).

Aanvullende uitrusting voorgeschreven voor bepaalde klassen:

- een vluchtmasker voor noodgevallen <sup>b</sup> moet voor elk lid van de bemanning van het voertuig aan boord van het voertuig worden meegevoerd in geval van gevaarsetiketnummers 2.3 of 6.1;
- een schop <sup>c</sup>;
- een rioolafdichting <sup>c</sup>;
- een opvangreservoir van kunststof <sup>c</sup>.










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<sup>a</sup> Niet voorgeschreven voor de gevaarsetiketnummers 1, 1.4, 1.5, 1.6, 2.1, 2.2 en 2.3

<sup>b</sup> Bijvoorbeeld een vluchtmasker voor noodgevallen met een gecombineerd gas/stof filter van het type A1B1E1K1-P1 of A2B2E2K2-P2 dat vergelijkbaar is met het masker beschreven in de norm EN 141.

<sup>c</sup> Alleen voorgeschreven voor de gevaarsetiketnummers 3, 4.1, 4.3, 8 en 9.

**Aanvullende aanwijzingen voor leden van de bemanning van het voertuig betreffende de gevaarseigenschappen van gevaarlijke goederen per klasse en betreffende te nemen maatregelen afhankelijk van de heersende omstandigheden**

(Grote) gevaarsetiketten	Gevaarseigenschappen	Aanvullende aanwijzingen
(1)	(2)	(3)
Ontplobbare stoffen en voorwerpen  1 1.5 1.6	Kunnen uiteenlopende eigenschappen en effecten bezitten, zoals massa-detonatie, scherfwerking, intense brand/ warmtestroomdichtheid, vorming van verblindend licht, hard lawaai of rook. Gevoelig voor schokken en/of stoot en/of warmte.	Zoek dekking maar blijf op afstand van ramen.
Ontplobbare stoffen en voorwerpen  1.4	Gering explosie- en brandgevaar.	Zoek dekking.
Brandbare gassen  2.1	Brandgevaar Explosiegevaar Kan onder druk staan. Verstikkingsgevaar Kan verbranding en/of bevrozing veroorzaken. Houders/tanks kunnen bij verhitting ontploffen.	Zoek dekking. Blijf weg uit laaggelegen gebieden.
Niet brandbare, niet giftige gassen  2.2	Verstikkingsgevaar. Kan onder druk staan. Kan bevrozing veroorzaken. Houders/tanks kunnen bij verhitting ontploffen.	Zoek dekking Blijf weg uit laaggelegen gebieden.
Giftige gassen  2.3	Vergiftigingsgevaar Kan onder druk staan. Kan verbranding en/of bevrozing veroorzaken. Houders/tanks kunnen bij verhitting ontploffen.	Gebruik vluchtmasker voor noodgevallen. Zoek dekking. Blijf weg uit laaggelegen gebieden.
Brandbare vloeistoffen  3	Brandgevaar Explosiegevaar Houders/tanks kunnen bij verhitting ontploffen.	Zoek dekking. Blijf weg uit laaggelegen gebieden. Verhinder dat vrijkomende stoffen in het aquatisch milieu of het rioleringsstelsel terechtkomen.
Brandbare vaste stoffen, zelf-ontledende stoffen, vaste ontplofbare stoffen in niet explosieve toestand  4.1	Brandgevaar. Ontvlambaar of brandbaar, kunnen worden ontstoken door hitte, vonken of vlammen. Kan zelfontledende stoffen bevatten die exotherm kunnen ontleden in geval van toevoer van warmte, contact met andere stoffen (zoals zuren, verbindingen van zware metalen of aminen), wrijving of stoot. Dit kan leiden tot de ontwikkeling van schadelijke en brandbare gassen of dampen. Houders/tanks kunnen bij verhitting ontploffen.	Verhinder dat vrijkomende stoffen in het aquatisch milieu of het rioleringsstelsel terechtkomen.
Voor zelfontbranding vatbare stoffen  4.2	Gevaar van spontane ontbranding indien colli zijn beschadigd of de inhoud is vrijgekomen. Kan heftig met water reageren.	
Stoffen die in contact met water brandbare gassen ontwikkelen  4.3	Brand- en explosiegevaar in contact met water.	Vrijgekomen stoffen moeten droog worden gehouden door de vrijgekomen stof te bedekken.

## SCHRIFTELIJKE INSTRUCTIES

### Maatregelen in het geval van een ongeval of noodgeval

In het geval van een ongeval of noodgeval dat tijdens het vervoer kan voorkomen of optreden, moeten de leden van de bemanning van het voertuig de volgende maatregelen treffen, indien dit veilig en praktisch uitvoerbaar is:

- Gebruik de reminrichting, zet de motor af en isoleer de accu door de hoofdschakelaar, indien beschikbaar, te activeren;
- Vermijd ontstekingsbronnen en in het bijzonder, rook niet of schakel geen elektrische apparaten in;
- Informeer de geëigende hulpdiensten, geef daarbij zoveel mogelijk informatie over het voorval of ongeval en de stoffen die daarbij betrokken zijn;
- Trek het veiligheidsvest aan en plaats de zelfstandig staande waarschuwingssignalen zoals de bedoeling is;
- Houd de vervoersdocumenten beschikbaar voor de hulpverleners bij hun aankomst;
- Loop niet in vrijgekomen stoffen of raak ze niet aan en vermijd inademing van gassen, rook, stof en dampen door boven de wind te blijven;
- Gebruik voor zover mogelijk en veilig uitvoerbaar de brandblussers om kleine / beginnende branden van banden, remmen en motorcompartimenten te blussen;
- Branden in laadcompartimenten moeten niet worden bestreden door leden van de bemanning van het voertuig;
- Gebruik voor zover mogelijk en veilig uitvoerbaar de uitrusting aan boord om het vrijkomen van stoffen in het aquatisch milieu of het rioleringsstelsel te voorkomen en vrijgekomen stoffen in te sluiten / op te vangen;
- Ga weg uit de omgeving van het ongeval of het noodgeval, en adviseer andere personen weg te gaan en volg het advies op van de hulpdiensten;
- Verwijder alle verontreinigde kleding en gebruikte verontreinigde beschermende uitrusting en voer deze op veilige wijze af.