

LINE-THROWING ROCKET

Wescom Signal and Rescue Germany GmbH

Wescom Group: 65-6254

Version No: 3.1.1.1

Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)

Issue Date: 24/09/2021

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L.REACH.GBR.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name	LINE-THROWING ROCKET
Synonyms	Comet/Pains Wessex rocket for linethrower 250: 9162700, 9500800
Proper shipping name	ARTICLES, PYROTECHNIC for technical purposes
Other means of identification	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions. Sea distress signal. The Line-Throwing Rocket 250 is used in Comet and Pains Wessex Line-Thrower, Art. 9160400 / 9160500 and Art. 9502000 / 9500700 being used for establishing a line connection between vessels, ship-to-shore, shore-to-ship and shore based rescue services.
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

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.wescom-group.com
Email	info@wescom-group.com

1.4. Emergency telephone number

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

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] [1]	H204 - Explosive Division 1.4
Legend:	1. Classified by Wescom Group; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

2.2. Label elements

Hazard pictogram(s)	
SIGNAL WORD	WARNING

Hazard statement(s)

H204	Fire or projection hazard.
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Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. 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.
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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.

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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RECh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**3.1. Substances**

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
		device contains	
		Pyrotechnic materials of;	
1.7757-79-1 2.231-818-8 3.Not Available 4.01-2119488224-35-XXXX 01-2120104950-66-XXXX	>60	<u>potassium nitrate</u>	Oxidizing Solid Category 3, Acute Toxicity (Oral) Category 4, Eye Irritation Category 2; H272, H302, H319 ^[1]
		rocket propellant;	
1.9004-70-0 2.Not Available 3.603-037-00-6 4.Not Available	30-60	<u>nitrocellulose</u>	Explosive Division 1.1; H201 ^[3]
1.55-63-0 2.200-240-8 3.603-034-00-X 603-034-01-7 4.01-2119488893-18-XXXX	30-60	<u>nitroglycerin</u>	Unstable Explosive, Acute Toxicity (Inhalation) Category 2, Acute Toxicity (Dermal) Category 1, Acute Toxicity (Oral) Category 2, Specific target organ toxicity - repeated exposure Category 2, Chronic Aquatic Hazard Category 2; H200, H330, H310, H300, H373, H411 ^[3]
Legend:	1. Classified by Wescom Group; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L		

SECTION 4 FIRST AID MEASURES**4.1. Description of first aid measures**

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

4.2 Most important symptoms and effects, both acute and delayed

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See Section 11

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

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

5.1. 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.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contact with other chemicals.
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5.3. Advice for firefighters

Fire Fighting	<p>WARNING: EXPLOSIVE MATERIALS / ARTICLES PRESENT!</p> <ul style="list-style-type: none"> ■ Evacuate all personnel and move upwind. ■ Prevent re-entry. ■ Alert Fire Brigade and tell them location and nature of hazard. ■ May detonate and burning material may be propelled from fire. ■ Wear full-body protective clothing with breathing apparatus. ■ Prevent, by any means available, spillage and fire effluent from entering drains and water courses. ■ Fight fire from safe distances and from protected locations. ■ Use flooding quantities of water. ■ DO NOT approach containers or packages suspected to be hot. ■ Cool any exposed containers not involved in fire from a protected location. ■ Equipment should be thoroughly decontaminated after use. <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
Fire/Explosion Hazard	<p>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.</p> <p>Compatibility Group G explosives are pyrotechnic substances, or article containing a pyrotechnic substances, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids).</p> <p>Combustible. Will burn if ignited.</p> <p>Combustion products include:</p> <ul style="list-style-type: none"> , carbon monoxide (CO) , carbon dioxide (CO₂) , other pyrolysis products typical of burning organic material.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

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

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ■ Handle gently. Use good occupational work practice. ■ Observe manufacturer's storage and handling recommendations contained within this SDS. ■ Avoid all personal contact, including inhalation. ■ Avoid smoking, naked lights, heat or ignition sources. ■ Explosives must not be struck with metal implements. ■ Avoid mechanical and thermal shock and friction. ■ Use in a well ventilated area. ■ Avoid contact with incompatible materials. ■ When handling DO NOT eat, drink or smoke. ■ Avoid physical damage to containers. ■ Always wash hands with soap and water after handling. ■ Work clothes should be laundered separately.
Fire and explosion protection	See section 5
Other information	<ul style="list-style-type: none"> ■ Store cases in a well ventilated magazine licensed for the appropriate Class, Division and Compatibility Group. ■ Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis. ■ Observe manufacturer's storage and handling recommendations contained within this SDS. ■ Store in a cool place in original containers. ■ Keep containers securely sealed. ■ No smoking, naked lights, heat or ignition sources. ■ Store in an isolated area away from other materials. ■ Keep storage area free of debris, waste and combustibles. ■ Protect containers against physical damage. ■ Check regularly for spills and leaks <p>NOTE: If explosives need to be destroyed contact the Competent Authority.</p> <ul style="list-style-type: none"> ■ Store away from incompatible materials. <p>Keep out of reach of children.</p>

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ■ All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods. ■ 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
Storage incompatibility	<ul style="list-style-type: none"> ■ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials. ■ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus. ■ Explosion hazard may follow contact with incompatible materials

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (English)	nitroglycerin	Not Available	0,095 mg/m ³ / 0,02 ppm	0,19 mg/m ³ / 0,01 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Czech)	nitroglycerin	Not Available	0,095 mg/m ³ / 0,01 ppm	0,19 mg/m ³ / 0,02 ppm	Not Available	kůže
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Spanish)	nitroglycerin	Not Available	0,095 mg/m ³ / 0,01 ppm	0,19 mg/m ³ / 0,02 ppm	Not Available	Piel
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Bulgarian)	nitroglycerin	Not Available	0,095 mg/m ³ / 0,01 ppm	0,19 mg/m ³ / 0,02 ppm	Not Available	кожа

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EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Greek)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (German)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Estonian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Italian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Croatian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (French)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Latvian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Lithuanian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Hungarian)	nitroglycerin	Not Available	0 095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Maltese)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Romanian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Slovak)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Slovenian)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Portuguese)	nitroglycerin	Not Available	0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Finnish)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available
EU Commission Directive (EU) 2017/164 of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values (Swedish)	nitroglycerin	Not Available	0,095 mg/m3 / 0,01 ppm	0,19 mg/m3 / 0,02 ppm	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium nitrate	Potassium nitrate	9 mg/m3	100 mg/m3	600 mg/m3
nitroglycerin	Nitroglycerin	0.1 mg/m3	2 mg/m3	75 mg/m3

Ingredient	Original IDLH	Revised IDLH
potassium nitrate	Not Available	Not Available
nitrocellulose	Not Available	Not Available
nitroglycerin	75 mg/m3	Not Available

MATERIAL DATA**8.2. Exposure controls**

8.2.1. Appropriate engineering controls	<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>
8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> Safety glasses with side shields Chemical goggles
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> Fire resistant/ heat resistant gloves where practical, otherwise Heavy-duty chemically resistant gloves capable of providing short-term protection against spontaneous ignition. Safety footwear <p>Hard hat Ear Protection.</p>
Thermal hazards	Not Available

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

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

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance	Steel tube with grey outer casing pressed with black/grey Pyrotechnical 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)	>71
pH (as supplied)	Not Applicable	Decomposition temperature	Not Applicable
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 Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	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

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity	See section 7.2
10.2. Chemical stability	<ul style="list-style-type: none"> ■ Presence of shock and friction ■ Presence of heat source and ignition source ■ Product is considered stable under normal handling conditions. ■ Stable under normal storage conditions. ■ Hazardous polymerization will not occur. Avoid contact with other chemicals.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. 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	<ul style="list-style-type: none"> ■ Generally not applicable.

LINE-THROWING ROCKET	TOXICITY	IRRITATION
	Not Available	Not Available
potassium nitrate	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg ^[1]	Not Available
	Oral (rat) LD50: >2000 mg/kg ^[1]	
nitrocellulose	TOXICITY	IRRITATION
	Not Available	Not Available
nitroglycerin	TOXICITY	IRRITATION
	dermal (rat) LD50: >9 mg/kg ^[1]	Not Available
	Oral (rat) LD50: 105 mg/kg ^[2]	

Legend: 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

NITROCELLULOSE	No significant acute toxicological data identified in literature search.
NITROGLYCERIN	The material may produce severe irritation to the eye causing pronounced 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

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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.

Substance has been investigated as a tumorigen, mutagen and reproductive effector. Equivocal tumorigen by RTECS criteria. Reproductive effector in rats.

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

12.1. Toxicity

LINE-THROWING ROCKET	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
potassium nitrate	LC50	96	Fish	22.5mg/L	4
nitrocellulose	EC50	96	Algae or other aquatic plants	579mg/L	4
nitroglycerin	LC50	96	Fish	1.38mg/L	4
	EC50	48	Crustacea	46mg/L	4
	EC50	96	Algae or other aquatic plants	0.4mg/L	4
	BCF	192	Fish	0.42mg/L	4
	NOEC	1440	Fish	0.03mg/L	2

Legend: *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*

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
potassium nitrate	LOW	LOW
nitroglycerin	LOW (Half-life = 14 days)	LOW (Half-life = 0.73 days)

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
potassium nitrate	LOW (LogKOW = 0.209)

12.4. Mobility in soil

Ingredient	Mobility
potassium nitrate	LOW (KOC = 14.3)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal	
	<ul style="list-style-type: none"> Explosives must not be thrown away, buried, discarded or placed with garbage. Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be

Continued...

	<ul style="list-style-type: none"> ▪ notified. ▪ 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. <p>Refer to local Waste Disposal Authority and supplier for suitable disposal procedure.</p>
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	1YE

Land transport (ADR)

14.1.UN number	0431										
14.2.UN proper shipping name	ARTICLES, PYROTECHNIC for technical purposes										
14.3. Transport hazard class(es)	<table border="0"> <tr> <td>Class</td> <td>1.4G</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	1.4G	Subrisk	Not Applicable						
Class	1.4G										
Subrisk	Not Applicable										
14.4.Packing group	Not Applicable										
14.5.Environmental hazard	Not Applicable										
14.6. Special precautions for user	<table border="0"> <tr> <td>Hazard identification (Kemler)</td> <td>Not Applicable</td> </tr> <tr> <td>Classification code</td> <td>1.4G</td> </tr> <tr> <td>Hazard Label</td> <td>1.4</td> </tr> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Limited quantity</td> <td>0</td> </tr> </table>	Hazard identification (Kemler)	Not Applicable	Classification code	1.4G	Hazard Label	1.4	Special provisions	Not Applicable	Limited quantity	0
Hazard identification (Kemler)	Not Applicable										
Classification code	1.4G										
Hazard Label	1.4										
Special provisions	Not Applicable										
Limited quantity	0										

Air transport (ICAO-IATA / DGR)

14.1. UN number	0431														
14.2. UN proper shipping name	Articles, pyrotechnic for technical purposes														
14.3. Transport hazard class(es)	<table border="0"> <tr> <td>ICAO/IATA Class</td> <td>1.4G</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>1L</td> </tr> </table>	ICAO/IATA Class	1.4G	ICAO / IATA Subrisk	Not Applicable	ERG Code	1L								
ICAO/IATA Class	1.4G														
ICAO / IATA Subrisk	Not Applicable														
ERG Code	1L														
14.4. Packing group	Not Applicable														
14.5. Environmental hazard	Not Applicable														
14.6. Special precautions for user	<table border="0"> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>135</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>75 kg</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>Forbidden</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>Forbidden</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Forbidden</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>Forbidden</td> </tr> </table>	Special provisions	Not Applicable	Cargo Only Packing Instructions	135	Cargo Only Maximum Qty / Pack	75 kg	Passenger and Cargo Packing Instructions	Forbidden	Passenger and Cargo Maximum Qty / Pack	Forbidden	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden	Passenger and Cargo Limited Maximum Qty / Pack	Forbidden
Special provisions	Not Applicable														
Cargo Only Packing Instructions	135														
Cargo Only Maximum Qty / Pack	75 kg														
Passenger and Cargo Packing Instructions	Forbidden														
Passenger and Cargo Maximum Qty / Pack	Forbidden														
Passenger and Cargo Limited Quantity Packing Instructions	Forbidden														
Passenger and Cargo Limited Maximum Qty / Pack	Forbidden														

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	0431						
14.2. UN proper shipping name	ARTICLES, PYROTECHNIC for technical purposes						
14.3. Transport hazard class(es)	<table border="0"> <tr> <td>IMDG Class</td> <td>1.4G</td> </tr> <tr> <td>IMDG Subrisk</td> <td>Not Applicable</td> </tr> </table>	IMDG Class	1.4G	IMDG Subrisk	Not Applicable		
IMDG Class	1.4G						
IMDG Subrisk	Not Applicable						
14.4. Packing group	Not Applicable						
14.5. Environmental hazard	Not Applicable						
14.6. Special precautions for user	<table border="0"> <tr> <td>EMS Number</td> <td>F-B , S-X</td> </tr> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Limited Quantities</td> <td>0</td> </tr> </table>	EMS Number	F-B , S-X	Special provisions	Not Applicable	Limited Quantities	0
EMS Number	F-B , S-X						
Special provisions	Not Applicable						
Limited Quantities	0						

Inland waterways transport (ADN)

14.1. UN number	0431
14.2. UN proper shipping name	ARTICLES, PYROTECHNIC for technical purposes
14.3. Transport hazard class(es)	1.4G Not Applicable
14.4. Packing group	Not Applicable
14.5. Environmental hazard	Not Applicable
14.6. Special precautions for user	Classification code 1.4G
	Special provisions Not Applicable
	Limited quantity 0
	Equipment required PP
	Fire cones number 1

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

Not Applicable

SECTION 15 REGULATORY INFORMATION**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****POTASSIUM NITRATE(7757-79-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

NITROCELLULOSE(9004-70-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

European Customs Inventory of Chemical Substances ECICS (English)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

NITROGLYCERIN(55-63-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
potassium nitrate	7757-79-1	Not Available	01-2119488224-35-XXXX, 01-2120104950-66-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Ox. Sol. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3	GHS03, GHS07, Dgr	H272, H315, H319, H335
2	Ox. Sol. 3, Ox. Sol. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Ox. Sol. 1, Aquatic Chronic 3, Ox. Liq. 3, Acute Tox. 4, Repr. 2, STOT SE 2, STOT RE 2, Ox. Liq. 2, Ox. Liq. 1	GHS03, Dgr, GHS08	H315, H319, H335, H271, H412, H302, H361, H371, H373

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
nitrocellulose	9004-70-0	603-037-00-6	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Sol. 1	GHS02, Dgr	H228
2	Expl. 1.1	GHS01, Dgr	H201
1	Expl. 1.1	GHS01, Dgr	H201
2	Expl. 1.1	GHS01, Dgr	H201
1	Expl. 1.1	GHS01, Dgr	H201
2	Expl. 1.1	GHS01, Dgr	H201
1	Expl. 1.1	GHS01, Dgr	H201
2	Expl. 1.1	GHS01, Dgr	H201
2	Flam. Sol. 1, Expl. 1.1, Flam. Liq. 2, Aquatic Chronic 4, Unst. Expl., Flam. Sol. 2	Dgr, GHS01	H228, H225, H413, H200
1	Expl. 1.1	GHS01, Dgr	H201
2	Expl. 1.1	GHS01, Dgr	H201

LINE-THROWING ROCKET

1	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1	GHS02, GHS08, Wng	H226, H312, H315, H319, H335, H373
2	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1	GHS02, GHS08, Wng	H226, H312, H315, H319, H335, H373
1	Expl. 1.1, Flam. Sol. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2	GHS01, GHS07, Dgr	H201, H228, H302, H315, H319, H332
2	Expl. 1.1, Flam. Sol. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2	GHS01, GHS07, Dgr	H201, H228, H302, H315, H319, H332
1	Expl. 1.1	GHS01, Dgr	H201

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
nitroglycerin	55-63-0	603-034-00-X, 603-034-01-7	01-2119488893-18-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 2, Acute Tox. 1, STOT RE 2, Aquatic Chronic 2	GHS01, GHS09, GHS08, GHS06, Dgr	H300, H373, H411
2	Unst. Expl., Acute Tox. 2, Acute Tox. 1, STOT RE 2, Aquatic Chronic 2, STOT SE 1, STOT RE 1, Expl. 1.1, Skin Irrit. 2, Flam. Liq. 2	GHS01, GHS09, GHS08, GHS06, Dgr	H200, H300, H310, H330, H411, H370, H372, H315, H225
1	Acute Tox. 2, Acute Tox. 1, STOT RE 2, Aquatic Chronic 2	GHS01, GHS09, GHS08, GHS06, Dgr	H300, H373, H411
2	Unst. Expl., Acute Tox. 2, Acute Tox. 1, STOT RE 2, Aquatic Chronic 2, STOT SE 1, STOT RE 1, Expl. 1.1, Skin Irrit. 2, Flam. Liq. 2	GHS01, GHS09, GHS08, GHS06, Dgr	H200, H300, H310, H330, H411, H370, H372, H315, H225

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (nitrocellulose; nitroglycerin; potassium nitrate)
China - IECSC	N (nitroglycerin)
Europe - EINEC / ELINCS / NLP	N (nitrocellulose)
Japan - ENCS	Y
Korea - KECL	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

Legend:
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

Full text Risk and Hazard codes

H200	Unstable explosives.
H201	Explosive; mass explosion hazard.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.

H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Other information

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

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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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