



SAFETY DATA SHEET

Ikaros Day and Night Signal



The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued 21.11.2016

1.1. Product identifier

Product name Ikaros Day and Night Signal
 Chemical name 2 g ignition composition, 32 g red illuminating composition and 25 g orange smoke composition
 Article no. 343200

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

Use of the substance/preparation Pyrotechnic day and night signal

1.3. Details of the supplier of the safety data sheet

Company name Nammo Sweden AB
 Postal address PO Box 54
 Postcode SE-711 22
 City Lindesberg
 Country Sweden
 Tel 0581-871 00
 Fax 0581-872 00
 E-mail info.ikaros@nammo.com
 Website <http://www.hansson-pyrotech.se/>
 Enterprise no. 556249-6835

1.4. Emergency telephone number

Emergency telephone Emergency call:+46 581 87 111 (Available 24 hours)

Identification comments Ask for officer on duty at Nammo LIAB AB.

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] Expl. 1.4; H204
 Eye Irrit. 2; H319
 Aquatic Chronic 2; H411
 Substance / mixture hazardous properties Main health hazard: Pyrotechnic product. Inhalation: May be mildly irritating to the respiratory system. Contact with skin: May be mildly irritating to the skin. Contact with burning product can cause severe burns. Contact with eyes: Causes serious eye irritation. Ingestion: May cause nausea and vomiting. Fire and explosion hazard: Risk of explosion if the product is exposed to electric shock, friction, fire or other sources of ignition. Environmental hazard: Toxic to aquatic life with long-lasting effects.

2.2. Label elements

Hazard Pictograms (CLP)



Composition on the label	Strontium nitrate:= 32,5 , 1-Aminoanthraquinone:≤ 21,2 %, Potassium chlorate:= 10,6 %
Signal word	Warning
Hazard statements	H204 Fire or projection hazard. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P102 Keep out of reach of children. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P501 Dispose of contents / container to
Special supplemental label info mixtures	Contains: Potassium Chlorate , 1-Aminoanthraquinone and Strontium nitrate .

2.3. Other hazards

Description of hazard	Contact with burning product can cause severe burns.
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SECTION 3: Composition/information on ingredients

Substance additional information	Magnesium powder stabilized with polymerised linseed oil.
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3.2. Mixtures

Substance	Identification	Classification	Contents
Strontium nitrate	CAS no.: 10042-76-9 EC no.: 233-131-9 Registration number: 01-2120007501-75	Ox. Sol. 3; H272 Acute tox. 4; H302 Eye Irrit. 2; H319	= 32,5
1-Aminoanthraquinone	CAS no.: 82-45-1 EC no.: 201-423-5	Aquatic Chronic 2; H411	≤ 21,2 %
Magnesium powder (pyrophoric)	CAS no.: 7439-95-4 EC no.: 231-104-6 Index no.: 012-001-00-3 Registration number: 01-2119488224-35	Water-react 1; H260 Pyr Sol. 1; H250	= 13,6 %
Potassium chlorate	CAS no.: 3811-04-9 EC no.: 223-289-7 Index no.: 017-004-00-3 Registration number: 01-2119494917-18	Ox. Sol. 1; H271 Acute tox. 4; H332 Acute tox. 4; H302 Aquatic Chronic 2; H411	= 10,6 %

SECTION 4: First aid measures

4.1. Description of first aid measures

General	Contaminated work clothing should be washed before using again. Special treatment is urgent (see label on this label).
Inhalation	Move the person to fresh air and keep at rest in a position comfortable for breathing. Consult a doctor if symptoms persist.
Skin contact	If burned, rinse with plenty of water for at least 20 minutes. In case of any other contact with skin, wash with soap and water for several minutes.
Eye contact	Hold eyelids open and rinse with soft, lukewarm water or eye wash liquid for at least five minutes. Remove contact lenses. Consult a doctor if symptoms persist.
Ingestion	Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms and effects	Contact with burning product can cause severe burns. May cause nausea and vomiting. Causes serious eye irritation. May be mildly irritating to the skin and respiratory system.
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4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment None other than the one listed above.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use foam, dry chemical, CO₂ or mist early in the fire. Once the product is lit up, it is very difficult to extinguish.

Improper extinguishing media No restrictions.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards The product is an explosion hazard, as it generates large quantities of gas and heat, once lit.

5.3. Advice for firefighters

Personal protective equipment Wear full protective clothing for chemical fires, including breathing apparatus. If possible, remove undamaged containers from the danger area. Remove all ignition sources.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures Ensure good ventilation. Use appropriate protective equipment, see section 8. Avoid skin and eye contact. Remove all ignition sources.

6.2. Environmental precautions

Environmental precautionary measures Prevent discharge into sewers or the local environment/streams. Contact emergency services upon greater emissions.

6.3. Methods and material for containment and cleaning up

Cleaning method Collect with tools that do not give rise to ignition. The waste is placed in closed containers and disposed of as hazardous waste in accordance with section 13.

6.4. Reference to other sections

Other instructions See sections 8 and 13 for information about protection and waste management.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling Avoid sparks, shock and friction. Use personal protective equipment, see section 8. Avoid skin and eye contact. Protect the product from sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

Storage Store cool and dry in a well-ventilated place. Keep away from sources of ignition - no smoking. Keep out of reach of children.

7.3. Specific end use(s)

Specific use(s) Day and night signal.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other Information about threshold limit values No exposure limits.

DNEL / PNEC

Control parameters comments PNEC/DNEL are not available.

8.2. Exposure controls

Precautionary measures to prevent exposure

Appropriate engineering controls

Keep away from fire, sparks and other ignition sources. When cleaning, use equipment that does not cause sparks.

Respiratory protection

Respiratory protection

Upon dust formation, use a particle filter EN143 Type P or EN149 type FFP-S.

Recommended type of equipment

Particle filter EN143 Type P or EN149 type FFP-S.

Hand protection

Hand protection

Leather gloves or the like.

Eye / face protection

Eye protection

Shatterproof goggles or visors.

Skin protection

Skin protection (except hands)

Normal industrial hygiene.

Hygiene / Environmental

Personal protection equipment, comments

Contact your protective equipment supplier for more information.

Specific hygiene measures

No smoking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Hermetically sealed plastic containers with red and yellow label.

Colour

Green cap for smoke composition and red cap with tactile marking for illuminating composition.

Odour

None.

Comments, pH (as supplied)

No information available.

Comments, pH (aqueous solution)

No information available.

Comments, Melting point / melting range

No information available.

Comments, Boiling point / boiling range

No information available.

Comments, Flash point

No information available.

Comments, Evaporation rate

No information available.

Flammability (solid, gas)

The contents are flammable.

Comments, Explosion limit

No information available.

Comments, Vapour pressure

No information available.

Comments, Vapour density

No information available.

Comments, Specific gravity

No information available.

Solubility in water

Insoluble.

Spontaneous combustibility

Value: > 190 °C

Method of testing: Ignition temperature

Comments, Viscosity

No information available.

Explosive properties

The product is explosive.

Oxidising properties

Content is oxidizing.

9.2. Other information

Other physical and chemical properties

Comments

These are typical values and do not constitute an exact product specification.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity

Stable product under recommended storage and handling conditions.

10.2. Chemical stability

Stability Stable product under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Stable product under recommended storage and handling conditions.

10.4. Conditions to avoid

Conditions to avoid Avoids temperatures above 75°C.

10.5. Incompatible materials

Materials to avoid Not applicable.

10.6. Hazardous decomposition products

Hazardous decomposition products The product is explosive, generating large quantities of gas and heat once ignited. Also emits large quantities of orange smoke.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information:

Other toxicological data No data available for the product itself. The data below is based on individual ingredients of the product.

Toxicological data for substances

Substance Strontium nitrate

LD50 oral **Value:** = 1892 mg/kg

Animal test species: Rat

Comments: Hazardous if ingested.

Other toxicological information for the substance For strontium compounds the health hazards are mainly related to the anion, here nitrate. Nitrates may be hazardous, if swallowed in large amounts, or in low doses for a long period.

Substance Magnesium powder (pyrophoric)

Other toxicological information for the substance For magnesium compounds the health hazards are mainly related to the anion, i.e. the magnesium-free part.

Substance Potassium chlorate

LD50 oral **Value:** = 1870 kg/mg

Animal test species: Rat

Comments: Acute toxic when ingested.

LD50 dermal **Value:** > 2000 mg/kg

Animal test species: Rabbit

Comments: Non-acute toxic.

Other toxicological information for the substance Chlorates in the body lead to formation of methaemoglobin in the blood, and destruction of the red blood corpuscles. The liver and kidneys may also suffer injuries.

Other information regarding health hazards

General Hazardous ingredients: potassium chlorate and strontium nitrate . Calculated ATE: 5718 mg/kg (not classified as harmful)

Potential acute effects

Inhalation May be mildly irritating to the respiratory system.

Skin contact May be mildly irritating to the skin.

Eye contact Causes serious eye irritation.

Ingestion May cause irritation of the gastrointestinal tract with nausea and vomiting as a result.

Aspiration hazard No aspiration hazard known.

Delayed effects / repeated exposure

Inhalation May be mildly irritating to the respiratory system.

Skin contact May be mildly irritating to the skin.

Eye contact Causes serious eye irritation.

Ingestion May cause nausea and vomiting.

General respiratory or skin sensitisation	No known sensitizing effect.
STOT-repeated exposure	Not known.

Carcinogenic, Mutagenic or Reprotoxic

Carcinogenicity	No known carcinogenicity.
Germ Cell Mutagenicity, human experience	No known mutagenicity.
Reproductive toxicity	No known reproductive toxicity.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	Product has not been tested. The data below is based on individual ingredients of the product. The product is toxic to aquatic life with long-lasting effects.
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Toxicological data for substances

Substance	Strontium nitrate
Bioaccumulation	Log Pow: 0,19. No bioaccumulation expected.

Substance	1-Aminoanthraquinone
Acute aquatic, Daphnia	Value: = 1,52 mg/ Method of testing: EC50 Duration: 48h Remarks: Toxic to aquatic organisms.

Biodegradability	Value: = 0 % Test period: 20 days Method of testing: OECD 301D Comments: Persistent.
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Bioaccumulation	Log Pow: 2,1. No bioaccumulation expected.
Bioconcentration factor (BCF)	Value: = 21,88 Comments: No bioaccumulation expected.

Substance	Magnesium powder (pyrophoric)
Acute aquatic, fish	Value: = 1355 mg/l Method of testing: LC50 Duration: 96h Remarks: Not hazardous to aquatic organisms.

Acute aquatic, algae	Value: = 240 mg/l Method of testing: IC50 Duration: 72h Remarks: Not hazardous to aquatic organisms.
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Bioaccumulation	Log Pow: < 0. No bioaccumulation expected.
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Substance	Potassium chlorate
Acute aquatic, fish	Value: = 1,75 mg/l Method of testing: LC50 Species: Oncorhynchus mykiss Duration: 96h Remarks: Toxic to aquatic organisms.

Bioaccumulation	Log Pow: < 0. No bioaccumulation expected.
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12.2. Persistence and degradability

Persistence and degradability	Not applicable. Contains inorganic materials and is in solid form.
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12.3. Bioaccumulative potential

Bioaccumulative potential	Not expected to bioaccumulate.
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12.4. Mobility in soil

Mobility	None – product in form of solid article.
Comments, Water solubility	Insoluble.

12.5. Results of PBT and vPvB assessment

PBT assessment results	Does not fulfil the criteria for classification as PBT.
vPvB evaluation results	Does not fulfil the criteria for classification pub.

12.6. Other adverse effects

Environmental details, summation	The product is toxic to aquatic life with long-lasting effects.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Waste should be collected in a separate container. NO SMOKING!
Relevant waste regulation	Waste regulation, SFS 2011:927.
Hazardous waste product	Unused product is hazardous waste and must be disposed of in accordance with national and local regulations. Contact approved waste disposal service to dispose of this material.
Hazardous waste packing	Used product treated as ordinary plastic / metallic waste. DO NOT TRY TO DISASSEMBLE UNUSED PRODUCT! Contaminated packaging may pose a fire hazard.
Product classified as hazardous waste	Yes
Packaging classified as hazardous waste	Yes
EWC waste code	EWC: 160402 fireworks wastes
Other Information	Contaminated packing may burn rapidly.

SECTION 14: Transport information

14.1. UN number

ADR / RID / ADN	0191
RID	0191
IMDG	0191
ICAO/IATA	0191
Comments	Article Number: 343200

14.2. UN proper shipping name

ADR	SIGNAL DEVICES, HAND
RID	SIGNAL DEVICES, HAND
IMDG	SIGNAL DEVICES, HAND
ICAO/IATA	SIGNAL DEVICES, HAND

14.3. Transport hazard class(es)

ADR / RID / ADN	1.4G
Class Code ADR/RID/ADN	1.4 G
Subsidiary Risk ADR/RID/ADN	1.4 G
RID	1.4G
IMDG	1.4G
Class Code IMDG	1.4 G
ICAO/IATA	1.4G
Class Code ICAO	1.4 G

14.4. Packing group

14.5. Environmental hazards

IMDG Marine pollutant	Yes
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14.6. Special precautions for user

EmS	F-B, S-X
Special safety precautions for user	See P-statements in Section 2.2.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Additional information.

Additional information. UN-number: 0191 Signal devices, hand. Packaging in cardboard 1.4G.
Packaging instructions: P135.
Order article number: 343200

IMDG / ICAO / IATA Other information

IMDG Other information Swedish Rescue Service Agency Cert. No.: 2009-4246 (15)
EX-nr (DOT/USA): EX2010101256

SECTION 15: Regulatory information

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

Legislation and regulations Safety data sheet and classification in accordance with regulation 1272/2008 /EC (CLP) and regulation 830/2015/EC.

15.2. Chemical safety assessment

Chemical safety assessment performed Yes

SECTION 16: Other information

CLP Classification, Comments Classification and labelling are based on CLP (Regulation 1272/2008/EC and Regulation 830/2015/EC)

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] Expl. 1.4; H204;
Eye Irrit. 2; H319;
Aquatic Chronic 2; H411;

List of relevant H-phrases (Section 2 and 3). H302 Harmful if swallowed.
H260 In contact with water releases flammable gases which may ignite spontaneously.
H250 Catches fire spontaneously if exposed to air.
H332 Harmful if inhaled.
H272 May intensify fire; oxidiser.
H204 Fire or projection hazard.
H271 May cause fire or explosion; strong oxidiser.
H411 Toxic to aquatic life with long lasting effects.
H319 Causes serious eye irritation.

Version 4
Responsible for safety data sheet Nammo Sweden AB