



Safety Data Sheet

Issued by Atp	Department R&D	Date 07 November 2014	Page no 1 (10)
Product denomination Ikaros Day & Night Signal	Document no. SDS Ikaros Day and Night Signal		Edition no. 9

Supersedes: Version 8 dated 24 October 2014

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

1.1. Product identifier

Product Name	Day & Night Signal (Original name: Day and Night Distress Signal, MK13, Smoke and Light N.2)
Article Nos.	343200
Chemical name	2 g of ignition composition, 32 g of red illuminating composition and 25 g of orange smoke composition.
Document number	SDS Ikaros Day and Night Signal – ed9

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

Use	Distress signal
Uses advised against	None specified

1.3. Details of the supplier of the safety data sheet

Company/Manufacturer	Hansson PyroTech AB / Nammo LIAB AB
Company address	P O Box 154, SE-711 23 Lindesberg, Sweden
E-mail, internet	info@hansson-pyrotech.com www.hansson-pyrotech.com
Telephone number	+46 581 871 00
Telefax number	+46 581 872 51

1.4. Emergency telephone number

Emergency telephone number	+46 581 87 111 (Available 24 hours)
Contact person	Ask for officer on duty at Nammo LIAB AB

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Main health hazard	Hazards refer to contents of signal
Inhalation	May be mildly irritating to respiratory system
Skin contact	May be mildly irritating to skin. Contact with flame or hot tube can cause severe burns
Eye contact	May be irritating to eyes
Ingestion	May be mildly irritating to gastro-intestinal tract. May cause nausea and vomiting
Fire and explosive hazards	Risk of explosion by shock, friction, fire or other sources of ignition
Environmental hazards	Toxic to aquatic life with long lasting effects



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CLP Classification Explosive Division 1.4 – H204 H319 – Irritant, Category 2 Aquatic Chronic Category 2 – H411 For full wording of Hazard statements see Section 16	DPD Classification Explosive – R2 Harmful –R22-R36 Hazardous for the Environment –R51/53 For full wording of Risk phrases see Section 16
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2.2. Label elements

DANGER

Contains: Potassium chlorate, strontium nitrate and 1-aminoanthraquinone

H204 – Fire or projection hazard.

H319 - Causes serious eye irritation.

H411 – Toxic to aquatic life with long lasting effects.



P102 - Keep out of reach of children.

P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P273 – Avoid release to the environment.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 – Dispose of contents / container to authorised waste disposal facility.

P370+P378 - In case of fire: Use water for extinction.

2.3. Other hazards

May be mildly irritating to skin, respiratory system and gastro-intestinal tract.

Contact with flame or hot tube can cause severe burns.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Hazardous component(s)

Under CLP EC1272/2008

Substances	CAS No.	REACH Reg. No.	%	Gram	CLP Hazard Category & H Statements
1-aminoanthraquinone	82-45-1	Not yet available	8.0	4.7	Aquatic Chronic Cat 2 – H411
Strontium nitrate	10042-76-9	01-2120007501-75	7.2	4.2	Oxidising Solid Cat 3 – H272 Acute Toxic Cat 4 – H302 Eye Irritant Cat 2 – H319
Magnesium powder	7439-95-4	01-2119537203-49	4.0	2.4	Water Reactive Cat 1 – H260
Potassium Chlorate	3811-04-9	01-2119494917-18	3.6	1.1	Oxidising Solid Cat 1 – H271 Acute Toxic Cat 4 – H302, 332 Aquatic Chronic Cat 2 – H411



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Under DPD EC1999/45

Substances	CAS No.	EC No.	%	Gram	Symbol & Risk phrases
1-amino anthraquinone	82-45-1	201-423-5	8.0	4.7	N: R51/53
Strontium nitrate	10042-76-9	233-131-9	7.2	4.2	O, Xn: R8-22-36
Magnesium powder	7439-95-4	231-104-6	4.0	2.4	F: R15
Potassium Chlorate	3811-04-9	223-289-7	3.6	1.1	O, Xn, N: R9-20/22-51/53

For full wording of H-statements and R-phrases see Section 16.

SECTION 4 FIRST-AID MEASURES

4.1. Description of first aid measures

After inhalation	Move patient to fresh air.
After skin contact	If burned, wash with plenty of water for at least 20 min.
After eye contact	Keep eyelids apart. Wash with a lot of water for several minutes. If needed visit physician.
After ingestion	Contact a physician.

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

Contact with flame or hot tube can cause severe burns. May be mildly irritating to skin, respiratory system and gastro-intestinal tract.

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

None other than above.

SECTION 5 FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- Suitable extinguishing media	Use any fire extinguishing media at early stages of fire. Once the product has ignited it cannot be extinguished.
- Not to be used	No restriction.

5.2. Special hazards arising from the substance or mixture

Product is explosive, evolving large quantities of gases and emitting large quantities of heat radiation if involved in fire.

5.3. Advice for fire-fighters

Normal equipment.



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SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Normal industrial hygiene, use protective gloves.

6.2. Environmental precautions

Do not let waste reach drains, sewers and bodies of water or leak into ground.

6.3. Methods and material for containment and cleaning up

Collect using non-sparking tools, reuse if undamaged. Otherwise, keep for disposal by experts.

6.4. Reference to other sections

See Sections 8 & 13.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid dropping the signal on hard surfaces.

7.2. Conditions for safe storage, including any incompatibilities

Storage Temperature should not exceed +75° C

7.3. Specific end use(s)

Distress signal

SECTION 8 PERSONAL PROTECTION/EXPOSURE CONTROLS

8.1. Control parameters

None set

8.2. Exposure controls

Recommended engineering controls No fire, sparks or welding close to the items. If cleaning up spillage, use tools which can not strike sparks.

Personal protective equipment Normally none needed. But in case of spillage:

- Respiratory protection In case of dust use particle filter mask such as EN143 Type P or EN149 Type FFP-S.

- Hand protection Leather or similar protective gloves.

- Eye protection Shatter-proof glasses or goggles.

- Skin protection Normal industrial hygiene

Specific hygiene measures No smoking.

Further information Always check applicability with your supplier of protective equipment.



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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Hermetically sealed in a plastic container with red and yellow label. Green lid for smoke and red lid with tactile marking for flare
Odour	None
Odour threshold value	Not applicable
pH (concentrated product)	Not applicable
Melting point (°C)	Not determined
Boiling point/range (°C)	Not applicable
Flash point (°C)	Not applicable
Evaporation rate	Not applicable
Flammability	Contents are flammable
Explosive properties	Explosive device! Product will emit smoke and a very hot flame if ignited. Once ignited it can not be extinguished.
Vapour pressure (mbar at 25°C)	Not applicable
Vapour density	Not applicable
Density at 20°C (g/cm ³)	Not determined
Solubility in water (% by weight)	Insoluble
Solubility in solvents	Not determined
Partition coefficient (log Pow)	Not applicable
Autoignition temperature (°C)	> 150
Decomposition temperature (°C)	Not determined
Viscosity	Not applicable
Oxidising properties	Contents have oxidising properties

9.2. Other information

Note: These are typical values and do not constitute a specification

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity

Stable product under recommended storage and handling conditions.

10.2. Chemical stability

Stable product under recommended storage and handling conditions.



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10.3. Possibility of hazardous reactions

Stable product under recommended storage and handling conditions.

10.4. Conditions to avoid

High temperatures, above 75 °C

10.5. Incompatible materials

Not applicable.

10.6. Hazardous decomposition products

Product is explosive, evolving large quantities of gases and emitting large quantities of heat radiation if involved in fire.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No data available on mixture. Data based on individual components shown below.

Hazardous ingredients	Potassium chlorate and Strontium nitrate.
(a) acute toxicity	Potassium chlorate: LD ₅₀ oral rat 1870 mg/kg - Harmful by ingestion Strontium nitrate: LD ₅₀ oral rat 1892 mg/kg - Harmful by ingestion Calculated product ATE = 17474 mg/kg – not harmful
(b) skin corrosion/irritation	Not classified as Skin Irritant Category 2 under CLP
(c) serious eye damage/irritation	Not classified as Eye Irritant Category 2 under CLP
(d) respiratory or skin sensitisation	No ingredients classified as sensitisers
(e) germ cell mutagenicity	No deleterious effects known.
(f) carcinogenicity	No deleterious effects known.
(g) reproductive toxicity	No deleterious effects known.
(h) STOT-single exposure	No deleterious effects known.
(i) STOT-repeated exposure	No deleterious effects known.
(j) aspiration hazard	No deleterious effects known.
Likely routes of exposure	Contact with skin
Symptoms related to the physical, chemical and toxicological characteristics	Powders may be mildly irritating to the skin, eyes and respiratory tract. May cause gastric irritation, nausea and vomiting.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	No deleterious effects known.



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Other information None

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

No data available on mixture. Data based on individual components shown below.

1-aminoanthraquinone EC₅₀ Algae 72h: 0.25mg/l harmful.

12.2. Persistence and degradability

Not applicable – contains inorganic materials and is in form of solid article.

12.3. Bioaccumulative potential

Mobility No test data on product.

12.4. Mobility in soil

None – product in form of solid article.

12.5. Results of PBT and vPvB assessment

Does not fulfil the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

Not Marine pollutant (IMDG Code).

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal of waste materials Waste should be kept in separate container.
NO SMOKING!
Destruction must only be done by experts. Used product may be disposed as ordinary plastic/metallic waste.
DO NOT TRY TO DISMANTLE THE PRODUCT!

Contaminated packing May burn rapidly.

SECTION 14 TRANSPORT INFORMATION

14.1. UN numbers	See table below
14.2. UN proper shipping name	See table below
14.3. Transport hazard class(es)	See table below
14.4. Packing group	Not applicable
14.5. Environmental hazards	None
14.6. Special 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	Not applicable



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Transport Classification

Article Number
(Order article No.) 343200

- UN No. 0191

- Proper shipping name Signal devices, hand

- Transport Class 1.4G

- Packing Instruction P135

Label 1.4

IMO-IMDG code

- EMS code

EX number
(DOT/USA) 2010101256

Swedish Rescue
Service Agency Cert. No. 2009-4246

Comment Not classified as Marine Pollutant

SECTION 15 REGULATORY INFORMATION

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

None specified

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out on this mixture.

SECTION 16 OTHER INFORMATION

Inventories - All ingredients listed in EINECS.

Sources of data used in this SDS

In-house data files
Literature such as Sax's Dangerous Properties of Industrial Materials, the RSC Dictionary of Substances and their Effects, RTECS
CLP Annex VI Tables 3.1 & 3.2
Suppliers' Safety Data Sheets
EU ESIS web site



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Version number 8
Date prepared 207.11.14
Supersedes Version 8 dated 24.10.14
Nature of revision Correction of CAS numbers for the ingredients.

Mixture classified under CLP (EC1272/2008) by calculation based on ingredient information.

R-phrases used in document

R2	Risk of explosion by shock, friction, fire or other sources of ignition
R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
R15	Contact with water liberates extremely flammable gases
R22	Harmful if swallowed
R20/22	Harmful by inhalation and if swallowed
R36	Irritating to eyes
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

H-statements used in document

H204	Fire or projection hazard
H260	In contact with water releases flammable gases which may ignite spontaneously
H271	May cause fire or explosion; strong oxidiser
H272	May intensify fire; oxidiser
H302	Harmful if swallowed
H319	Causes serious eye irritation
H332	Harmful if inhaled
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Based on EU Regulation 1907/2006 as amended by 453/2010

The current Material Safety Data Sheet was defined by Hansson PyroTech AB on the basis of knowledge of the product at the date of issue.

Therefore, data provided in this form can not be considered as exhaustive.

It is the duty of the operator

- to develop under his own responsibility, the safety dispositions regarding the operation of the product taking into account the data from this form



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- to pass to all users and operators the appropriate safety data and warning regarding the risks mentioned in the documentation relative to the utilisation of the product
- to be cautious of possible risks faced when the product is used for other utilisation than those for which it has been designed