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

1.1. Product identifier

Product Name	Ikaros Parachute Rocket Red
Article Nos.	340100 (Order article Nos. 340100, 340170 and 340180)
Chemical name	50 g of propellant composition, 6.5 g of black powder and 95 g of red illuminating composition
Document number	SDS Ikaros Parachute Rocket Red – ed5

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 rocket
Inhalation	May be mildly irritating to respiratory system
Skin contact	May be mildly irritating to skin. Contact with exhaust flame or burning flare can cause severe burns
Eye contact	Irritating to eyes
Ingestion	Harmful if swallowed
Fire and explosive hazards	Risk of explosion by shock, friction, fire or other sources of ignition.
Environmental hazards	Not classified as hazardous to the environment

CLP Classification	DPD Classification

Explosive Division 1.3 – H203 Acute Toxic Category 4 – H302 Eye Irritant Category 2 – H319 For full wording of Hazard statements see Section 16	Explosive – R2 Harmful –R22-R36 For full wording of Risk phrases see Section 16

2.2. Label elements

DANGER
Contains: Strontium nitrate and Potassium perchlorate
H203 – Explosive; fire, blast or projection hazard.
H302 – Harmful if swallowed.
H319 – Causes serious eye irritation.

P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P501 – Dispose of contents / container to authorised waste disposal facility.
P370+P378 - In case of fire: Use water for extinction.
P309+P311 - If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

2.3. Other hazards

May be mildly irritating to skin and respiratory system. Contact with exhaust flame or burning flare can cause severe burns.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.2. Mixtures Hazardous component(s)

Under CLP EC1272/2008

Substances	CAS No.	REACH Registration No.	%	Gram	CLP Hazard Category & H Statements
Strontium nitrate	10042-76-9	01-2120007501-75	31.35	47.5	Oxidising Solid Cat 3 – H272 Acute Toxic Cat 4 – H302 Eye Irritant Cat 2 – H319
Potassium perchlorate	7778-74-7	01-2120021000-89	24.09	36.5	Oxidising Solid Cat 1 – H271 Acute Toxic Cat 4 – H302
Potassium nitrate	7757-79-1	01-2119488224-35	3.17	4.8	Oxidising Solid Cat 3 – H272
Sulphur	7704-34-9	01-2119487295-27	0.46	0.7	Skin Irritant Cat 2 – H315
Also contains -		Magnesium powder stabilised with polymerised linseed oil			

Under DPD EC1999/45

Substances	CAS No.	EC No.	%	Gram	Symbol & Risk phrases
Strontium nitrate	10042-76-9	233-131-9	31.35	47.5	O, Xn: R8-22-36
Potassium perchlorate	7778-74-7	231-912-9	24.09	36.5	O, Xn: R9-22
Potassium nitrate	7757-79-1	231-818-8	3.17	4.8	O, N: R8-50
Sulphur	7704-34-9	231-722-6	0.46	0.7	Xi: R36/37/38 52/53

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. If needed visit physician.
After ingestion	Contact a physician.

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

Contact with exhaust flame or burning flare can cause severe burns. Harmful if swallowed.

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.

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.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Dark red plastic tube with red plastic lids and orange label
Odour	None
Odour threshold value	Not applicable
pH (concentrated product)	Not applicable
Melting point (ºC)	Not determined
Boiling point/range (ºC)	Not applicable
Flash point (ºC)	Not applicable
Evaporation rate	Not applicable
Flammability	Contents are flammable
Explosive properties	Intrinsically explosive. Contains rocket motor and very hot and intense burning red flare.
Vapour pressure (mbar at 25°C)	Not applicable
Vapour density	Not applicable
Density at 20ºC (g/cm^3)	Not determined
Solubility in water (% by weight)	Insoluble
Solubility in solvents	Not determined
Partition coefficient (log Pow)	Not applicable
Autoignition temperature (ºC)	> 250
Decomposition temperature (ºC)	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.

10.3. Possibility of hazardous reactions

Stable product under recommended storage and handling conditions.

10.4. Conditions to avoid

High temperatures, above 75 ^{o}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 perchlorate, Strontium nitrate, and Sulphur.
(a) acute toxicity	Strontium nitrate: LD_{50} oral rat 1892 mg/kg Harmful by ingestion Calculated product ATE = 901 mg/kg
(b) skin corrosion/irritation	Sulphur: Skin irritant category 2 under CLP
(c) serious eye damage/irritation	Strontium nitrate: 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.
Other information	None

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

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

Potassium perchlorate	EC_{50} Daphnia magna 24h: 670mg/l Not 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 a 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

	Non US market	Non US market	USA market
Transport	**In Fibre Board Box**	**In Steel Cage +**	**In Steel Cage +**

Classification		**Fibre Board Box**	**Fibre Board Box**
Article Number (Order article No.)	340100 (340100)	340100 (340170)	340100 (340180)
- UN No.	0195	0506	0403
- Proper shipping name	Signals, distress, ship	Signals, distress	Flares, aerial
- Transport Class	1.3G	1.4S	1.4G
- Packing Instruction	P135	P135	P135
Label	1.3	1.4	1.4
IMO-IMDG code			
- EMS code	F-B, S-X	F-B, S-X	F-B, S-X
EX number (DOT/USA)	N/A	N/A	2007050373
Swedish Rescue Service Agency Cert. No.	2009-4265	2009-4265	711/4817/2004
Comment	Not classified as Marine Pollutants		

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 & 3.2Sources of key data used

Suppliers' Safety Data Sheets

RTECS, EU ESIS web site

Supersedes: Version 4 dated 12 September 2011

Version number	5
Date prepared	24.10.14
Supersedes Version	4 dated 12.09.11
Nature of revision	New emergency telephone number. REACH registration numbers introduced for strontium nitrate, potassium nitrate, potassium perchlorate and sulphur.

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
R22	Harmful if swallowed
R36	Irritating to eyes
R36/37/38	Irritating to eyes, respiratory system and skin
R50	Very toxic to aquatic organisms
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

H-statements used in document

H203	Explosive; fire, blast or projection hazard
H271	May cause fire or explosion; strong oxidiser
H272	May intensify fire; oxidiser
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation

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
- 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