



Safety Data Sheet

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|---------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 1 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

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

1.1. Product identifier

| | |
|-----------------|---------------------------------------------|
| Product Name | Ikaros Line Thrower |
| Article Nos. | 346100 |
| Chemical name | 2 g of black powder and 220 g of propellant |
| Document number | SDS Ikaros Line Thrower-ed2 |

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

| | |
|----------------------|-------------------------------------------------------------------------|
| Use | A pilot line launcher for cables and ropes in rescue operations at sea. |
| 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 70 314 59 76 (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 can cause severe burns. |
| Eye contact | May be mildly 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 |



Safety Data Sheet

| | | | |
|---------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 2 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| CLP Classification Explosive Division 1.3 – H203 Acute Toxic Category 4 – H302 For full wording of Hazard statements see Section 16 | DPD Classification Explosive – R2 Harmful –R22 For full wording of Risk phrases see Section 16 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|

2.2. Label elements

WARNING

Contains: Potassium perchlorate

H203 – Explosive; fire, blast or projection hazard.

H302 – Harmful if swallowed.



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

Contact with exhaust gases can cause 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 |
|-----------------------|-----------|------------------------|-------|-------|----------------------------------------------------------|
| Potassium perchlorate | 7778-74-7 | Not yet available | 72.34 | 160.6 | Oxidising Solid Cat 1 – H271 Acute Toxic Cat 4 – H302 |
| Potassium nitrate | 7757-79-1 | Not yet available | 0.68 | 1.5 | Oxidising Solid Cat 3 – H272 |
| Sulphur | 7704-34-9 | Not yet available | 0.14 | 0.3 | Skin Irritant Cat 2 – H315 |

Under DPD EC1999/45

| Substances | CAS No. | EC No. | % | Gram | Symbol & Risk phrases |
|-----------------------|-----------|-----------|-------|-------|-----------------------|
| Potassium perchlorate | 7778-74-7 | 231-912-9 | 72.34 | 160.6 | O, Xn: R9-22 |
| Potassium nitrate | 7757-79-1 | 231-818-8 | 0.68 | 1.5 | O, N: R8-50 |
| Sulphur | 7704-34-9 | 231-722-6 | 0.14 | 0.3 | Xi: R36/37/38 52/53 |

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



Safety Data Sheet

| | | | |
|-------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 3 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

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 can cause burns. Harmful if ingested.

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.



Safety Data Sheet

| | | | |
|---------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 4 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

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 | Red plastic container with handle, metal ignition mechanism and white plastic lid. Containing metal coloured metal rocket and white synthetic line |
| 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 |



Safety Data Sheet

| | | | |
|---------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 5 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

| | |
|--------------------------------------|---------------------------------------------------------------------------------------|
| Flammability | Contents are flammable |
| Explosive properties | Intrinsically explosive. Rocket motor burns with flame and strong impulse if ignited. |
| 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) | > 250 |
| 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.

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 if involved in fire.



Safety Data Sheet

| | | | |
|---------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 6 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

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, Potassium nitrate, and Sulphur. |
| (a) acute toxicity | Calculated product ATE = 691 mg/kg Harmful if swallowed |
| (b) skin corrosion/irritation | Powders may be mildly irritating to the skin. |
| (c) serious eye damage/irritation | Powders may be mildly irritating to the eyes. |
| (d) respiratory or skin sensitisation | No deleterious effects known. |
| (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 | Powders may be mildly irritating to the respiratory tract. |
| (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 can 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 EC₅₀ 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.



Safety Data Sheet

| | | | |
|---------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 7 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

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 |

Transport Classification

In Fibre Board Box

| | |
|------------------------|------------------------|
| Article Number | 346100 |
| - UN No. | 0240 |
| - Proper shipping name | Rockets, line-throwing |
| - Transport Class | 1.3G |
| - Packing Instruction | P130 |
| Label | 1 |
| IMO-IMDG code | |
| - EMS code | F-B, S-X |



Safety Data Sheet

| | | | |
|----------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-------------------------|
| Issued by Atp | Department R&D | Date 12 September 2011 | Page no 9 (9) |
| Product denomination Ikaros Line Thrower Supersedes: Version 2 dated 18 December 2007 | | Document no. SDS Ikaros Line Thrower | Edition no. 2 |

| | |
|-----------|----------------------------------------------------------------------------------------------|
| R9 | Explosive when mixed with combustible material |
| R22 | Harmful if swallowed |
| 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 |

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