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

Date issued 22.11.2016

1.1. Product identifier

Product name Ikaros Handflare, Red
Chemical name 2 g ignition composition, 74 g red illuminating composition
Article no. 341500 (order number 341500, 341570)

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

Use of the substance/preparation Pyrotechnic distress flare.

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 Expl. 1.4; H204
Regulation (EC) No 1272/2008 Acute tox. 4; H302
[CLP/GHS] Eye Irrit. 2; H319
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: Harmful if swallowed. Fire and explosion hazard: Risk of explosion if the product is exposed to electric shock, friction, fire or other sources of ignition. Environmental hazard: Not classified as dangerous to the environment.

2.2. Label elements

Hazard Pictograms (CLP)
Composition on the label
Strontium nitrate: = 40.92

Signal word
Warning

Hazard statements
H204 Fire or projection hazard. H302 Harmful if swallowed. H319 Causes serious eye irritation.

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: Strontium nitrate .

2.3. Other hazards
Description of hazard
Contact with burning product can cause severe burns.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Substance</th>
<th>Identification</th>
<th>Classification</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium nitrate</td>
<td>CAS no.: 10042-76-9</td>
<td>Ox. Sol. 3; H272</td>
<td>= 40.92</td>
</tr>
<tr>
<td></td>
<td>EC no.: 233-131-9</td>
<td>Acute tox. 4; H302</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Registration number: 01-2120007501-75</td>
<td>Eye Irrit. 2; H319</td>
<td></td>
</tr>
<tr>
<td>Potassium nitrate</td>
<td>CAS no.: 7757-79-1</td>
<td>Ox. Sol. 3; H272</td>
<td>= 1.97 %</td>
</tr>
<tr>
<td></td>
<td>EC no.: 231-818-8</td>
<td>Aquatic Acute 1; H400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Registration number: 01-2119488224-35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. Harmful if swallowed. Causes serious eye irritation. May be mildly irritating to the skin and respiratory system.

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)

Pyrotechnic distress flare.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Black metal tube with red plastic handle, black plastic top lid and orange label.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>See under &quot;Physical state&quot;.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>None.</td>
</tr>
<tr>
<td><strong>Comments, pH (as supplied)</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, pH (aqueous solution)</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Melting point / melting range</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Boiling point / boiling range</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Flash point</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Evaporation rate</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>The contents are flammable.</td>
</tr>
<tr>
<td><strong>Comments, Explosion limit</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Vapour pressure</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Vapour density</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Comments, Specific gravity</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Solubility in water</strong></td>
<td>Insoluble.</td>
</tr>
<tr>
<td><strong>Spontaneous combustability</strong></td>
<td><strong>Value</strong>: &gt; 250 °C</td>
</tr>
<tr>
<td><strong>Method of testing</strong></td>
<td>Ignition temperature</td>
</tr>
<tr>
<td><strong>Comments, Viscosity</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>The product is explosive.</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>Content is oxidizing.</td>
</tr>
</tbody>
</table>

#### 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
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

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 oral Value</th>
<th>Animal test species</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium nitrate</td>
<td>= 1892 mg/kg</td>
<td>Rat</td>
<td>Hazardous if ingested.</td>
</tr>
<tr>
<td>Potassium nitrate</td>
<td>= 3750 mg/kg</td>
<td>Rat</td>
<td>Nitrates may be hazardous, if swallowed in large amounts, or in low doses over a longer period.</td>
</tr>
</tbody>
</table>

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.

Other toxicological information for the substance
Nitrates may be hazardous, if swallowed in large amounts, or in low doses over a longer period.

Other information regarding health hazards

General
Hazardous ingredients: strontium nitrate. Calculated ATE: 1221 mg/kg (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
Harmful if swallowed. 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
Produced has not been tested. The data below is based on individual ingredients of the product.

Toxicological data for substances

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulation</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strontium nitrate</td>
<td></td>
<td>Potassium nitrate</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>Log Pow: 0.19. No bioaccumulation expected.</td>
<td></td>
</tr>
</tbody>
</table>
**12.2. Persistence and degradability**

| Persistence and degradability | Not applicable. Contains inorganic materials and is in solid form. |

**12.3. Bioaccumulative potential**

| Bioaccumulative potential | Not expected to bioaccumulate. |

**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 | Not classified as toxic to water (the IMDG-code). |

**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! |
| 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: 341500 |

**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 |
**14.4. Packing group**

**14.5. Environmental hazards**

IMDG Marine pollutant No

**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.

UN-number: 0191 Signal devices, hand. Packaging in cardboard 1.4G.

Packaging instructions: P135.

Order article number: 341500

UN-number: 0373 Signal devices, hand. Packaging in steel cage + cardboard:

1.4S. Packaging instructions: P135. Order article number: 341570

**IMDG / ICAO / IATA Other information**

IMDG Other information Swedish Rescue Service Agency Cert. No.: 2009-4268 (11-12) (UN-nr 0191 och 0373)

EX-nr (DOT/USA): EX2006030023 (UN-nr 0191)

**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

Chemical Safety Assessment Chemical safety investigation (CSI) is established for the product.

**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 Expl. 1.4; H204;

Regulation (EC) No 1272/2008 Acute tox. 4; H302;

[CLP/GHS] Eye Irrit. 2; H319;

List of relevant H-phrases (Section H302 Harmful if swallowed.

2 and 3). H400 Very toxic to aquatic life.

H272 May intensify fire; oxidiser.

H204 Fire or projection hazard.

H319 Causes serious eye irritation.

Version 2

Responsible for safety data sheet Nammo Sweden AB