## SECTION 1: Identification of the substance or the mixture and of the enterprise or company

### 1.1. Product identifier

| | |
|---|---|
| **- Designation:** | Buoyant smoke signal<br>*Models*: DNS-3 / L-46 / L-48 |
| **- Other means of identification:** | - |
| **- CAS No.:** | Not applicable (mixture). See section 3 for the components. |
| **- CE No.:** | Not applicable (mixture). See section 3 for the components. |
| **- Index No.:** | Not applicable (mixture). See section 3 for the components. |
| **- REACH registration number:** | Not applicable (mixture). See section 3 for the components. |
| **- CLP notification number:** | Not applicable (mixture). See section 3 for the components. |

### 1.2. Relevant uses identified for the substance or the mixture, and uses which are not recommended

Pyrotechnic article manufactured for use as a visual signal for maritime assistance.

Rescue equipment approved according to Directive 2014/90/EC for marine equipment and the international Convention for the safety of life at sea (SOLAS - rudder indicator).

### 1.3. Details of the safety data sheet supplier

**LECEA** Sistemas Pirotécnicos Avanzados, S.A.
Barrio Epiztegia, 3
01208 Larrea - Barrundia (Alava - España)Tel.:
(+34) 945 317 024
Email: info@pirolec.com

### 1.4. Emergency telephone number

Tel.: (+34) 945 317 024 (Office hours)

## SECTION 2: Identification of hazards

### 2.1. Mixture classification

| ***Classification derived from applying the classification standards in Directive 99/45/EC*** | |
|---|---|
| ***Physicochemical hazards:*** | **Complete article:** |
| | - Fire or projection hazard (Explosive). |
| ***Health hazards:*** | **Pyrotechnic mixture (container content):** |
| | - Harmful by inhalation and if swallowed (R 20/22, Xn). |
| ***Environmental hazards:*** | **Pyrotechnic mixture (container content):** |

| | |
|---|---|
| | - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment (R 52/53). |
| ***Classification derived from applying the classification standards in Regulations 1272/ 2008 (CLP)*** | |
| ***Physicochemical hazards:*** | **Complete article:**<br>- Explosive (Division 1.4): Fire or projection hazard (H204). |
| ***Health hazards:*** | **Pyrotechnic mixture (container content):**<br>- Harmful if swallowed (Acute tox. 4, H302).<br>- Harmful if inhaled (Acute tox. 4, H332). |
| ***Environmental hazards:*** | **Pyrotechnic mixture (container content):**<br>- Harmful to aquatic life with long lasting effects (Aquatic chronic 3, H412). |

### 2.2. Label features

Article subject to reduced labelling according to section 1.3.5 of Appendix I of Regulations EC 1272/2008: *Explosives sold with the objective of producing an explosive or pyrotechnic effect will be labelled and packed exclusively in compliance with requirements for explosives*.

| | |
|---|---|
| ***- Risk phrases*** | H204: Fire or projection hazard. |
| ***- Caution phrases*** | P210 – Keep away from heat/sparks/open flames/hot surfaces. — No smoking.<br>P373 – DO NOT fight fire when fire reaches explosives.<br>P250 – Avoid impacts or friction to the article.<br>P401 – Store in a dry place protected from sources of ignition. |
| ***- Hazard pictograms*** |  |
| ***- Signal word*** | Attention |

### 2.3. Other hazards

Should the article break, avoid inhaling the powder as it could irritate the respiratory tract. Avoid inhaling the smoke.

## SECTION 3: Composition/information on the components

### 3.1. Substances

Not applicable.

### 3.2. Mixtures

Composition/information on the ingredients

| Comp. | Name | CAS No. | CE No. | REACH No. | Classification (DSD/CLP) | R/H phrases | Conc. |
|---|---|---|---|---|---|---|---|
| Pyrotechnic mixture (container content) | Potassium chlorate | 3811-04-9 | 223-289-7 | Not available | - Oxidiser<br>- Harmful<br>- Hazardous to the environment | R9<br>R20/22<br>R51/53 | < 25 % |
| | | | | | - Ox. Sol. 1<br>- Acute Tox. 4<br>- Acute Tox. 4<br>- Aquatic Chronic 2 | H271<br>H332<br>H302<br>H411 | |

*The complete meaning of the H and R phrases can be found in section 16.*

## SECTION 4: First aid

### 4.1. Description of first aid

The symptoms resulting from chemical poisoning can occur after exposure. As such, if in doubt, or in the event of discomfort, seek medical attention and show medical staff this SDS.

| | |
|---|---|
| **In the event of ingesting the content of the article** | Rinse your mouth thoroughly and spit out. Induce vomiting (ONLY IN CONSCIOUS INDIVIDUALS!) In the event of spontaneous vomiting keep the casualty's head lowered to prevent inhalation.<br><br>Seek medical attention and show this SDS to the emergency services. |
| **In the event of eye contact with the content of the article** | Rinse eyes with plenty of water at ambient temperature for at least 10 minutes. Ensure that the casualty does not rub or close their eyes. In the event that the casualty uses contact lenses these must be removed provided they are not stuck to the eyes, in which case additional injury could be caused.<br><br>Seek medical attention and show this SDS to the emergency services. |
| **In the event of burns** | Cool the wound with water for ten minutes (do not use ice). Carefully remove any object such as rings, watches, etc. before the area becomes inflamed.<br>Cover the wound with a sterile gauze and apply a bandage without tightening it to prevent infections. Depending on the size of the burn medical attention may be required. |
| **Smoke inhalation** | In the event of symptoms of poisoning from smoke, move the casualty to a quiet area where they have access to fresh air. In the event of those suffering from asthma or with respiratory problems medical attention is required. |

### 4.2. Main symptoms and effects, acute and delayed-action

If, in the event of an accident, the content of the article were to be ingested, given the potassium chlorate content it is probable that the following symptoms could appear: stomach cramps, stomach pain, bluish lips or nails, bluish skin, diarrhoea, headache, nausea, panting, sore throat, vomiting, anuria, collapsing, convulsions, loss of consciousness.
As the result of powder inhalation, symptoms of non-immediate effects: bluish lips or nails, haemorrhaging, nausea, panting, vomiting, loss of consciousness.
If powder comes into contact with the eyes reddening and pain will probably occur.

Prolonged or repeated contact with skin could cause dermatitis.

### 4.3. Indication of all medical attention and of special treatments which must be applied immediately

The effects of potassium chlorate can arise at a later date. Medical supervision is recommended.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing means

Do not fight the fire if it has reached a large volume of articles of this type, evacuate the area and protect yourself.

To extinguish, use large volumes of water by spraying.
A jet of water SHOULD NOT BE USED as an extinguishing agent as it could spread the fire.

### 5.2. Specific hazards derived from the substance or mixture

Formation of hazardous combustion gases and vapours in the event of fire.
The pyrotechnic mixture contains a high proportion of oxidisers which can considerably worsen a fire.
Possible spontaneous combustion and risk of explosion, should the product spread as powder.

### 5.3. Recommendations for firefighting personnel

**Act in accordance with the Internal Emergency Plan and/or the information sheets on conduct in the event of accidents and other emergencies.**

The procedures drawn up to fight fires must include the physicochemical product properties. This article in itself only has a minor fire and projection hazard in the event of ignition or priming. Fires outside should not cause the virtually instant explosion of almost all the content of the container.

In the event of fire, quickly isolate the area by evacuating anyone in the vicinity of the incident. No action should be performed which could cause a personal risk or without adequate training.

Firefighters must wear appropriate protective equipment and a self-contained breathing apparatus with a full face mask which operates in positive pressure mode. Protective equipment for firefighters (including helmets, gloves and boots), in accordance with European Standard EN 469, provide a basic protection level in the event of a chemical incident.

## SECTION 6: Measures in the event of accidental spillage

### 6.1. Personal precautions, protective equipment and emergency procedures

In the event that the article is damaged, and the content spills, it is fundamental to avoid the generation of powder and sparks. Do not dispose of waste in drains (explosion risk).

In the event of extensive spillage contact the supplier of this safety data sheet.

### 6.2. Environmental precautions

Inform the relevant authorities if a large volume of the article content reaches watercourses or the sewerage system.

### 6.3. Contention and cleaning methods and material

In the event of the article breaking and the content spilling, NEVER USE metal clear-up materials such as shovels or rakes which can generate sources of ignition as the result of sparks, friction or impact when clearing up the spillage.

In the event of the device breaking, the contaminated area must be hosed with water immediately to prevent the formation of powder: clear up the spillage carefully using absorbent, non-combustible materials (soil, sand, vermiculite, diatomaceous earth, etc.). Sources of ignition and accumulation of electrostatic charges should be avoided when cleaning up; brushes with natural hair or palm bristles should be used. The collected material will be placed in a closed container away from heat sources in order to be delivered to a port reception facility. Do not forget that pyrotechnic compositions can easily recover their properties once dry.

Should any type of fault be observed in the article, contact the supplier (see section 1.3). Destruction may only be performed by specialised personnel using controlled processes and in authorised facilities. Keep the article in a dry and safe place and follow the instructions given by telephone or take it to a port reception facility. If in doubt contact your distributor.

### 6.4. Reference to other sections

For more information on the handling of waste see section 13.
For more information on personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Use outdoors. Always launch leeward once the mechanism has been started.

Observe and test the instructions indicated on the label. It is worthwhile reading and learning the handling instructions by heart as you may need it at night and in poor weather conditions.

The material expiry date must be strictly observed. It must be inspected periodically to ascertain its condition and removed if its useful life has been completed. Take into account that rescue equipment which has expired will work, however will do so hazardously: it could heat up excessively or burn violently.

If you suspect that the product could be in poor conditions, replace it and contact the supplier (see section 1.3) or

your distributor.

This article is not a toy, keep it away from children and take into account that help signals should only be used in the event of danger and when help is required.

DO NOT ATTEMPT TO DISASSEMBLE THE ARTICLE.

### 7.2. Safe storage conditions including possible incompatibility

Avoid friction or impacts to the product. Store in a wetproof container which protects from moisture. It is advisable to stow on the navigating bridge in order to be accessed quickly in the event of an emergency.

For the storage of large volumes keep in a cool and dry place. Away from flammable substances, ignition sources and protected from high temperatures. Avoid excess stacking of the product, the device must not be crushed.

### 7.3. Final specific uses

Pyrotechnic rescue device (smoke signals).

## SECTION 8: Exposure/personal protection checks

### 8.1. Control parameters

| Limit ambient values | | | | | | | |
|---|---|---|---|---|---|---|---|
| Country | CE | CAS | Chemical agent | VLA-ED (8h) | | VLA-EC (15 min) | |
| | | | | ppm | mg/m3 | ppm | mg/m3 |
| - | - | - | - | - | - | - | - |

### 8.2. Exposure checks

Take into account that in accordance with Directive 98/24/EC, the following is required in order of priority:
— drawing up of appropriate work procedures and technical checks, the use of suitable equipment and materials,
— the application of collective protection measures at the source of the risk, such as adequate ventilation and appropriate organisational measures, and
— in the event that exposure cannot be prevented using other means, the use of personal protection measures such as personal protective equipment.

| *Personal protective equipment* | |
|---|---|
| Eyes | As a general rule protection is not required. |
| Inhalation | As a general rule protection is not required, avoid inhaling the smoke. |
| Skin protection | As a general rule protection is not required. |

| | |
|---|---|
| Should the article break and spillage of the content occur | Should the device break, use disposable gloves when clearing up the content and avoid inhaling the powder. If there is insufficient ventilation it may be necessary to use a mask type P2 (according to EN 143). |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance/description | Device comprising a container which has the pyrotechnic mixture. Once the buoyant smoke signal has been initiated it will emit a uniform quantity of smoke in a highly visible colour. |
| Odour | - |
| Starting point and boiling range | - |
| Flashpoint | - |
| Spontaneous combustion | - |
| Vapour pressure at 20ºC | - |
| Solubility | - |
| Density at 25ºC | - |
| Boiling range | - |
| Melting point/crystallisation point | - |
| Explosive properties | Explosive article category 1.4: Articles which have only a minor hazard in the event of igniting or priming. |
| Oxidising properties | - |

### 9.2. Additional information

Nothing to note.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Not applicable.

### 10.2. Chemical stability

Not applicable.

### 10.3. Possibility of dangerous reactions

Explosive article.

### 10.4. Conditions to be avoided

Keep away from sources of heat, sparks, open flame and hot surfaces.

### 10.5. Incompatible materials

Not applicable.

### 10.6. Dangerous decomposition products

No information.

## SECTION 11: Toxicology information

### 11.1. Information on toxicological effects

There is no information about the mixture in its present condition. In accordance with the established methodology in section 3 of Appendix I of Regulations 1272/2008, the pyrotechnic mixture contained in the article is classified according to its components as follows:

| | |
|---|---|
| Acute tox. 4. | H302: Harmful if swallowed.<br>H332: Harmful if inhaled. |

## SECTION 12: Ecological information

### 12.1. Toxicity

There is no information about the mixture in its present condition. In accordance with the established methodology in section 4 of Appendix I of Regulations 1272/2008, the pyrotechnic mixture contained in the article is classified according to its components as follows:

| | |
|---|---|
| Aquatic Chronic 3 | H412: Harmful to aquatic life with long lasting effects. |

### 12.2. Persistence and degradability

There is no information about the mixture in its present condition.

### 12.3. Bioaccumulation potential

There is no information about the mixture in its present condition.

### 12.4. Mobility in soil

There is no information about the mixture in its present condition.

### 12.5. Results of the PBT and vPvB evaluation

There is no information about the mixture in its present condition. None of the components in the mixture fulfils the conditions for being classified as PBT or vPvB.

## SECTION 13: Considerations regarding disposal

### 13.1. Methods for handling waste

| *LER code* | *Description* |
|---|---|
| *16 04 03** | *Other explosive waste (pyrotechnic rescue signals).* |
| Disposal according to the legislation in force. | |
| Spilled products must be handled as described in section 6.3 and then sent to an agent for disposal or recovery as appropriate. The waste should not be disposed of in the sewerage networks or at sea, but should be taken to a port reception facility as set forth in Directive 2000/59/EC. Consult your supplier to resolve any queries. | |
| Applicable standards | • Directive 2008/98/EC on waste.<br>• Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues. |

## SECTION 14: Information regarding transport

### 14.1. UN No.:

0197

### 14.2. Official United Nations transport designation

SMOKE SIGNALS

### 14.3. Hazard class(es) for transport

1

### 14.4. Packaging group

Not set forth.

### 14.5. Environmental hazards

Marine pollutant: No

### 14.6. Specific precautions for users

Classification code: 1.4G
Label: 1.4
No special measures are described, follow the instructions set forth by UNECE in:
http://www.unece.org/trans/danger/publi/adr/Instructions/English2011.pdf

### 14.7. Bulk transport in accordance with Appendix II of the Marpol Convention 73/78 and the IBC Code

Not applicable.

## SECTION 15: Regulatory information

### 15.1. Specific regulations and legislation with regard to health, safety and the environment for the substance or mixture

Article sold under the protection of Directive 96/98/EC for marine equipment: Appendix A.1/1.10 Buoyant smoke signals (pyrotechnics).
Approved product in compliance with the international Convention for the safety of life at sea (SOLAS - rudder indicator).

- In Spain: Category according to Royal Decree 989/2015: Pyrotechnic articles for use in navigation (smoke signals).

### 15.2. Evaluation of chemical safety

No evaluation of chemical safety has been performed concerning the product.

## SECTION 16: Further information.

| | |
|---|---|
| *Advice on training* | All the crew must know, understand and be duly skilled on the use of all pyrotechnic products onboard. |
| *Abbreviations and acronyms* | Glossary of the European Chemicals Agency: http://echa.cdt.europa.eu |
| *Bibliography* | - Database of ECHA substances: http://echa.europa.eu/web/guest/information-on-chemicals<br>- Guidance on compilation of Safety Data Sheet (v 1.1. December 2011).<br>- Supplier safety data sheets.<br>- IFA - Databases on hazardous substance (GESTIS): http://limitvalue.ifa.dguv.de/<br>- International chemical safety sheets: ICSC: 0548 (potassium chlorate).<br>- Safety in nautical activities. Maritime rescue (2011). |

| Complete text of the R and H phrases referred to in section 3 of the SDS (these phrases are assigned to the components, the classification of the mixture is in section 2.1) | |
|---|---|
| R9 | Explosive when mixed with combustible material. |
| R20/22 | Harmful by inhalation and if swallowed. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| H271 | May cause fire or explosion; strong oxidiser. |
| H332 | Harmful if inhaled. |
| H302 | Harmful if swallowed. |
| H411 | Toxic to aquatic life with long lasting effects. |

*We recommend that you study this Safety Data Sheet carefully and, if required, consult an expert in order to understand the information contained herein. The information contained herein is true and accurate with regard to the data referred to, corresponding to the current state of our knowledge and is supplied in good faith. Nevertheless, no express or implicit guarantee is given as the product quality can be affected by a wide variety of factors.*

**DO NOT HANDLE THE SUBSTANCE BEFORE HAVING READ AND UNDERSTOOD ALL THE SAFETY INSTRUCTIONS.**