SAFETY DATA SHEET
Based on Regulation (EC) No. 1907/2006 as amended

SDS PyroPol Signal Orange Smoke CF3 and variants see Section 1
Issued: October 2015_Rev.02

SECTION 1: PRODUCT AND COMPANY INFORMATION

Product Name:
PyroPol Signal Orange Smoke CF3, Art.-No. 1294200
PYROTECH NEREUS ORANGE SMOKE, Art.-No. 1294210
PANZERA ORANGE SMOKE PM5, Art.-No. N235
CIL/ORION FLOATING ORANGE SMOKE SIGNAL 3 MINUTES, Art.-No. 52251, N235CAN

Area of Usage:
Marine distress signal

Manufacturer:
Company name: PyroPol GmbH
Company address: Lippenhorstweg 29, 21514 Hornbek, Germany
E-Mail / Internet: info@pyropol.de / www.pyropl.de
Telephone No.: +49 – (0) 4158 – 89 00 73
Telefax No.: +49 – (0) 4158 – 89 00 97
24 h Emergency Contact No.: +49 – (0) 171 – 126 15 95

SECTION 2: HAZARDS IDENTIFICATION

Main health hazard: Hazards refer to contents of signal
Inhalation: Irritating to respiratory system
Skin contact: Irritating to skin. May cause sensitisation by skin contact. Contact with exhaust gases or hot casing can cause burns.
Eye contact: Irritating to eyes
Ingestion: May give rise to upset stomach, sickness, vomiting
Fire and explosion hazards: Risk of ignition by shock, fire, friction, or other sources of ignition
Environmental hazards Toxic to aquatic organism. May cause long-term adverse effects in the aquatic environment.

CLP Classification

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive division 1.4</td>
<td>H204</td>
</tr>
<tr>
<td>Skin irritant category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Skin sensitiser category 1</td>
<td>H317</td>
</tr>
<tr>
<td>Eye irritant category 2</td>
<td>H319</td>
</tr>
<tr>
<td>Acute toxic category 4</td>
<td>H332</td>
</tr>
<tr>
<td>STOT SE category 3</td>
<td>H335</td>
</tr>
<tr>
<td>Aqueous chronic category 2</td>
<td>H411</td>
</tr>
</tbody>
</table>

DPD Classification

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive</td>
<td>R2</td>
</tr>
<tr>
<td>Harmful</td>
<td>R20/22/36/37/38/43</td>
</tr>
<tr>
<td>Hazardous for Environment</td>
<td>R51/53</td>
</tr>
</tbody>
</table>

For full wording of hazard statements see Section 16

Label:
Danger Symbol: 

Key Word: Warning

WARNING: Contains Potassium chlorate and Solvent Orange 86

Danger Advice Documents:

H204 Fire or projection hazard
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory 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.
P280 Wearing of protective gloves, clothes, glasses and face mask
P309 + P311 If exposed or you feel unwell: call a POISON CENTER or a doctor/physician
P370 + P380 During Fire, evacuate immediate area
P374 Fire fighting under normal precautions from a reasonable distance
P501 Dispose of contents / container to authorized waste disposal facility

Other hazards: May be mildly irritating to skin and respiratory system. Contact with exhaust smoke, hot gases or hot casing can cause severe burns.

SECTION 3: COMPONENT INFORMATION

Hazardous component(s):

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS No</th>
<th>REACH registration No</th>
<th>%</th>
<th>Mass (g)</th>
<th>CLP Hazard Category and H statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium chlorate</td>
<td>3811-04-9</td>
<td>01-2119971261-41</td>
<td>30%</td>
<td>60</td>
<td>Oxidizing solid Cat. 1 – H271</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute toxic Cat. 4 – H302/332</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic chronic Cat. 2 – H411</td>
</tr>
<tr>
<td>Solvent Orange 86</td>
<td>81-64-1</td>
<td>01-2119494917-18</td>
<td>35%</td>
<td>70</td>
<td>Skin irritant Cat. 2 – H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin sensitizer Cat. 1 – H317</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye irritant Cat. 2 – H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT SE Cat. 3 – H335</td>
</tr>
</tbody>
</table>

Under CLP EC1272/2008

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS number</th>
<th>EC number</th>
<th>%</th>
<th>Mass (g)</th>
<th>Symbol and Risk phrases</th>
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<tbody>
<tr>
<td>Potassium chlorate</td>
<td>3811-04-9</td>
<td>223-289-7</td>
<td>30%</td>
<td>60</td>
<td>O, Xn, N: R9/20/22/51/53</td>
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<tr>
<td>Solvent Orange 86</td>
<td>81-64-1</td>
<td>201-368-7</td>
<td>35%</td>
<td>70</td>
<td>Xi: R36/37/38/43</td>
</tr>
</tbody>
</table>

Under DPD EC1999/45

SECTION 4: FIRST AID MEASURES

General Advice: Not defined
After Inhalation (Combustion Gases): Having problems after inhaling smoke, consult a physician.
After Skin Contact: Wash with lots of water
After Contact with Eyes: Wash with lots of water, contact a physician
After Swallowing: Not possible to swallow product

Advice for doctors
Symptoms: Not defined
Dangers: Not defined
Actions to be taken: Not defined

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media
Suitable extinguishing media: Use any extinguishing media at early stages of fire. Once the product has ignited, it cannot be extinguished.
Not to be used: No restriction
Special hazards arising from the substance or mixture: Product emits dense orange smoke that can be ignited in a confined space

Advice for fire fighters: The usual protective gear in case of fire

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions: Normal industrial hygiene. Use protective gloves.
Environmental Precautions: Do not let waste reach drains, sewers and bodies of water, or leak into ground
Methods and material for containment and cleaning up: Collect using non sparking tools, reuse if undamaged. Otherwise, keep for disposal by experts.
SECTION 7: HANDLING AND STORAGE

Handling
Advice on Safe Handling: Conforming instructions printed on the signal.
Protect from exposure to impacts, friction, heat, fire, sparks,
electrostatic charges and other ignition sources.
Avoid dropping the signal on hard surfaces.
Do not use damaged product.

Conditions for safe storage, including any incompatibilities
Storage: Temperature should not exceed 75°C
Specific end use(s): Marine distress signal

Storage
Requirements of Storage Facility and Container:
Store in a cool and dry place.
Store only in the original packaging and according to the local regulations regarding the storage of explosive materials.

SECTION 8: PERSONAL PROTECTION/EXPOSURE CONTROLS

Control parameters: None set

Exposure controls
Recommended engineering controls: No fire, sparks or welding close to the items. If cleaning up spillage, use tools which cannot strike sparks.
Personal protective equipment: Normally not 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

Information on basic physical and chemical properties
Appearance: Colored metal body with red cap
Odor: None
Odor 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: Pyrotechnic smoke generator
Vapor pressure (mbar at 25°C): Not applicable
Vapor density: Not applicable
Density at 20°C (g/cm³): Not determined
Solubility in water (% by weight): Insoluble
Solubility in solvents: Not determined
Partition coefficient (log Pow): Not applicable
Autoignition temperature (°C): > 190
Decomposition temperature (°C): Not determined
Viscosity: Not applicable
Oxidizing properties: Contents have oxidizing properties

Other information
Note: These are typical values and do not constitute a specification
SECTION 10: STABILITY AND REACTIVITY

| Reactivity: | Stable product under recommended handling and storage conditions |
| Chemical stability: | Stable product under recommended handling and storage conditions |
| Possibility of hazardous reactions: | Stable product under recommended handling and storage conditions |
| Conditions to avoid: | High temperatures, above 100°C |
| Incompatible materials: | Not applicable |
| Hazardous decomposition products: | Product will emit dense orange smoke and become hot |

SECTION 11: TOXICOLOGICAL INFORMATION

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

Hazardous ingredients: Potassium chlorate and Solvent Orange 86

Acute toxicity:
Potassium chlorate:
LD₅₀ oral rat 1870 mg/kg, harmful by ingestion
Calculated product ATE ingestion = 17474 mg/kg, not classified as hazardous by ingestion
Potassium chlorate: ATE inhalation 1.5 mg/l
Calculated product ATE inhalation = 3.9 mg/l, harmful by inhalation

Skin corrosion / irritation: Solvent Orange 86: Skin irritant category 2 under CLP
Serious eye damage / irritation: Solvent Orange 86: Eye irritant category 2 under CLP
Respiratory or skin sensitisation: Solvent Orange 86: Skin sensitiser category 1 under CLP
Germ cell mutagenicity: No deleterious effects known
Carcinogenicity: No deleterious effects known
Reproductive toxicity: No deleterious effects known
STOT-single exposure: Solvent Orange 86: Respiratory irritant category 3 under CLP
STOT-repeated exposure: No deleterious effects known
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 sensitisation by skin contact. 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

Toxicity
Potassium chlorate: EC₅₀ Daphnia magna 24h: 1.093 mg/l Toxic

Persistence and degradability:
Not applicable. Contains inorganic materials and is in form of solid article.

Bioaccumulative potential
Mobility: No test data on product
Mobility in soil: None. Product in form of solid article.

Results of PBT and vPvB assessment: Does not fulfill the criteria for classification as PBT or vPvB

Other adverse effects: Not a marine pollutant (IMDG code)
### SECTION 13: DISPOSAL

**Waste treatment methods**

Disposal of waste materials: Disposal should be carried out in accordance with local health and safety, waste, environmental and storage / manufacture of explosives regulations. **DO NOT TRY TO DISMANTLE THE PRODUCT!**

### SECTION 14: TRANSPORT INFORMATION

**Land transport (ADR/RID, GGVSEB)**

- **UN No.:** 0507
- **Proper Shipping Name:** SIGNALS, SMOKE
- **Transport Class / Label:** 1.4S
- **Packing Instruction:** P135

**Sea Transport (IMO-IMDG Code, GGVSee)**

- **UN No.:** 0507
- **Proper Shipping Name:** SIGNALS, SMOKE
- **Transport Class / Label:** 1.4S
- **Packing Instruction:** P135
- **EMS Code:** F - B, S - X
- **Comment:** Not classified as Marine Pollutants

**Air Transport (ICAO/IATA DGR)**

- **UN No.:** 0507
- **Proper Shipping Name:** Signals, smoke
- **Transport Class / Label:** 1.4S
- **Packing Instruction:** P135
- **Additional information:** Passenger and Cargo Aircraft
- **EX Number (DOT/USA):** EX2008070055

### SECTION 15: REGULATORY INFORMATION

**Safety, health and environmental regulations / legislation specific for the substance or mixture:** None specified

**Chemical safety assessment:** A chemical safety assessment has not been carried out on this mixture

**Other Regulations:** Work Protection Law, Health Protection Law, Explosives Regulations and Explosive Law must be conformed to. The item is not subject to safety evaluations.

### SECTION 16: OTHER INFORMATION

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<thead>
<tr>
<th>R-phrases used in this document</th>
<th>Description</th>
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<tbody>
<tr>
<td>R2</td>
<td>Risk of explosion by shock, friction, fire, or other sources of ignition</td>
</tr>
<tr>
<td>R9</td>
<td>Explosive if mixed with combustible material</td>
</tr>
<tr>
<td>R20/22</td>
<td>Harmful by inhalation and if swallowed</td>
</tr>
<tr>
<td>R36/37/38</td>
<td>Irritating to eyes / respiratory system and skin</td>
</tr>
<tr>
<td>R43</td>
<td>May cause sensitisation by skin contact</td>
</tr>
<tr>
<td>R51/53</td>
<td>Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment</td>
</tr>
</tbody>
</table>

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<th>Description</th>
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<tr>
<td>H204</td>
<td>Fire or projection hazard</td>
</tr>
<tr>
<td>H271</td>
<td>May cause fire or explosion, strong oxidizer</td>
</tr>
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<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
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<td>H315</td>
<td>Causes skin irritation</td>
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H335  May cause respiratory irritation
H411  Toxic to aquatic life with long lasting effects

Abbreviations and Acronyms:

GHS  Globally Harmonized System of Classification and Labelling of Chemicals
CAS-No.  Registration Number of the Chemical Abstract Service
EG-No.  Registration Number of the European Inventory of Existing Chemical Substances (EINECS)
EG-Index-No.  ID Code for a particular dangerous material
AGW-value  Work Place Safety/Limit Value
BGW-value  Biological Work Place Safety/Limit Value
CMR-Substance  Cancersgen, Mutagen, Fertility Damaging

The information in the safety data sheet is based on our present knowledge. It is intended to describe our products with regard to safety requirements and is not intended to guarantee any particular properties.

This is a voluntary product information.

There is no legal obligation to issue a safety data sheet according to Regulation (EC) No 1907/2006 as amended.