

# MATERIAL SAFETY DATA SHEET (MSDS)

## CLASS 9 – ELEVATED TEMPERATURE LIQUID PRODUCTS (part of OTHER DANGEROUS SUBSTANCES)

### 1. CHEMICAL PRODUCT IDENTIFICATION

#### 1.1 PRODUCT IDENTIFIER:

This data sheet is about substances and mixtures that are characterized as miscellaneous dangerous substances which are included in Class 9, according UNITED NATIONS Committee of Experts on the Transport of Dangerous Goods (UN). Class 9 substances and articles (miscellaneous dangerous substances and articles) are substances and articles which, during transport, present a danger not covered by other classes. Class 9 includes, inter alia:

1. substances and articles not covered by other classes which experience has shown, or may show, to be of such a dangerous character that the provisions of part A of chapter VII of SOLAS 1974, as amended, shall apply.

2. substances not subject to the provisions of part A in chapter VII of the aforementioned Convention, but to which the provisions of Annex III of MARPOL 73/78, as amended, apply.

The substances and articles of Class 9 are subdivided as follows:

- Substances which, on inhalation as fine dust, may endanger health
- Substances evolving flammable vapour
- Lithium batteries
- Life-saving appliances
- Substances and articles which, in the event of fire, may form dioxins
- Substances transported or offered for transport at elevated temperatures
- Environmentally hazardous substances
- Genetically modified micro-organisms (GMMOs) and genetically modified organisms (GMOs)
- Other substances or articles presenting a danger during transport, but not meeting the definitions of another class.

In the present MSDS, the Elevated Temperature Liquid Products, N.O.S. (members of the sub-class: Substances transported or offered for transport at elevated temperatures) are examined.

The following products have been recorded in the present MSDS: Asphalt

#### 1.2 RELEVANT IDENTIFIED USES:

Industrial and professional. Perform risk assessment prior to use.

#### Emergency telephone number:



National Emergency Centre: 166  
National Poison Centre: (+30) 2107793777

### 2. HAZARDS IDENTIFICATION

#### 2.1 CLASSIFICATION OF HAZARDS

##### 2.1.1 According to GHS (EC Regulation 1272/2008)

Not classified

##### 2.1.2 According to DSD-DPD (Directive 67/548/EEC)

Not classified

#### 2.2 LABELLING:

- According to GHS (EC Regulation 1272/2008)

**Signal word:** WARNING

**Hazard pictograms** (at least a subset): Not classified

**Hazard statements (H)** (at least a subset): Not classified

**Precautionary statements (P)** (at least a subset): Not classified

**Supplemental Hazard Information (EU)** may be: Not classified

- According to DSD-DPD (Directive 67/548/EEC)

**Symbol(s) and indication(s) of danger** (at least a subset): Not classified

**Risk Phrases (R)** (at least a subset): Not classified

**Safety phrases (S)** (at least a subset): Not classified

Particular hazards to man and environment: Not classified

### 2.3 OTHER HAZARDS (may be):

PBT and vPvB assessment: -

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1 MIXTURE:

Hazardous ingredients may be: -

[Composition is referred to ANNEX-ADDITIONAL INFORMATION.xlsx](#)

## 4. FIRST AID MEASURES

### 4.1 DESCRIPTION OF FIRST AID MEASURES:

**WARNING BEFORE PREVENTION:**

Remove from exposure, lie down. Take off all contaminated clothing immediately. When symptoms persist or in all cases of doubt seek medical advice. Never give anything by mouth to an unconscious person.

**FOLLOWING INHALATION:**

Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.

**FOLLOWING SKIN CONTACT:**

Cool skin rapidly with cold water after contact with molten material. Take off all contaminated clothing immediately. Wash off with soap and water but do not attempt to remove asphalt that adheres to skin before obtaining medical assistance. Wash contaminated clothing before re-use. If symptoms persist, seek medical attention immediately.

**FOLLOWING EYE CONTACT:**

Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.

**FOLLOWING INGESTION:**

Do NOT induce vomiting. Seek medical attention immediately. Clean mouth with water and drink afterwards plenty of water. If a person vomits when lying on his back, place him in the recovery position.

**NOTES FOR THE DOCTOR:**

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### 4.2 MOST IMPORTANT SYMPTOMS AND EFFECT, BOTH ACUTE AND DELAYED:

Inhalation: No significant adverse health effects are expected to occur upon short-term exposure to this product at ambient temperatures. Fumes have been associated with irritation of eyes nose and throat. Also, lower respiratory effects have been reported.

(Subject to applicability): Hydrogen sulfide (H<sub>2</sub>S) can evolve when this product is stored or handled at elevated temperatures. H<sub>2</sub>S can cause respiratory irritation and hypoxia. At low concentrations, H<sub>2</sub>S has an odour of rotten eggs. At higher concentrations, H<sub>2</sub>S odour is not apparent. DO NOT use odour as an indicator of exposure to H<sub>2</sub>S.

Ingestion: Contact with hot material may cause burns. If swallowed at ambient temperatures, no significant adverse health effects are anticipated. If swallowed in large quantities, this material can obstruct the intestine.

Skin Contact: Hot material can cause burns to the skin. May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. Exposure to sunlight and to asphalt vapours may amplify tendency for sunburns. Skin contact may cause harmful effects in other parts of the body.

Eye Contact: Hot material can cause burns to the eyes. Mists, vapours or fumes from this material can cause eye irritation with tearing, redness, or a stinging or burning feeling.

### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

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## 5. FIRE-FIGHTING MEASURES

### 5.1 EXTINGUISHING MEDIA:

Suitable extinguishing media:

Isolate area around container involved in fire. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. Use approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines

SMALL FIRES: Any extinguisher suitable for Class fires, dry chemical, CO<sub>2</sub>, water spray, fire fighting foam, or Halon. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable extinguishing media:

Do not use water jet. - Cool tanks, shells, and containers exposed to fire and excessive heat with water.

### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific hazards arising from the chemical:

vapours may form explosive mixture with air. Flammable vapour production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. When heated above flash point and mixed with air and exposed to an ignition source, flammable vapours can burn in the open or explode in confined spaces. Being heavier than air, vapours may travel long distances to an ignition source and flash back.

Hazardous combustion products:

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 PERSONAL PRECAUTION, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

#### 6.1.1 For non-emergency personnel:

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN. Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas.

#### 6.1.2 For emergency responders:

Response and clean-up crews must be properly trained and must utilize proper protective equipment.

### 6.2 ENVIRONMENTAL PRECAUTIONS AND METHODS FOR CONTAINMENT AND CLEANING UP:

#### Land spillage:

Carefully contain and stop the source of the spill, if safe to do so. - People who are not involved with the management of the incident, should evacuate the area. - Inform local authorities if large hot quantities are released in the ground.

#### Spillages in water or at sea:

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. - Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. Authorities should be notified if reportable quantity release occurs.

### 6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

#### 6.3.1 For containment:

Refer to Section 6.3.2

#### 6.3.2 For cleaning up:

Land spillage: Soak up condensate with inert absorbent material and collect in ventilated waste container for disposal.

- Use water as spray for dispersion of released vapours and protect personnel facing incident.

,ATTENTION! The stagnant quantities render the surfaces slippery.

Spillages in water or at sea: The leakage from a ship at sea is treated according to the Annex of the 1978 Protocol of International Convention 1973 "Prevention of Sea Pollution from Ships» (MARPOL 73/78) and its amendments. - Updating the nearest port, local authorities and the ownership of the ship for the incident.

- Leakage is restricted to a limited space, using floating dams.

- The amount of leakage will sink because the product is heavier than water.

#### 6.3.3 Other information:

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## 7. HANDLING AND STORAGE

### 7.1 PRECAUTIONS FOR SAFE HANDLING:

#### 7.1.1 Protective measures:

**Information on safe handling and measures to prevent fire/explosion:**

Use only in area provided with appropriate exhaust ventilation. - vapours may form explosive mixtures with air. - The product should only be used in areas where electrical classification meets the product rating for this product, i.e. intrinsically safe. - Avoid the contact with skin and eyes.

**Measures to protect the environment:**

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#### 7.1.2 Advice on general occupational hygiene:

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners to clean skin. Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing when handling heated material. Use a full-body heat-resistant or internally cooled suit when work conditions dictate. Should there be Changing facilities near the workplace with available warm water and inactive soap for cleaning of skin after each task. - Installing safety shower near the workplace.

### 7.2 CONDITIONS FOR SAFE STORAGE:

#### Technical measures and storage conditions:

Product is generally transported and stored hot.

- Handle as a combustible liquid.

- Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area.

- Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

- Store distant from fire and ignition sources.

- No smoking near areas where material is stored or used.

- Keep away from flame, sparks, excessive temperatures and open flame.

- Empty product containers or vessels may contain explosive vapours.

- Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

- Avoid storage near incompatible materials.

(Subject to applicability): Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapours when opening hatches and dome covers. Confined spaces should be ventilated prior to entry.

Packaging materials:  
Requirements for storage rooms and vessels:  
Storage class:

Use approved vented containers. Keep containers closed and clearly labelled.  
Storing the product in well ventilated area, away from sources of heat or any other source.  
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### 7.3. SPECIFIC END USE(S):

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS:

#### 8.1.1 Occupational Exposure/Biological Limit Values:

[Occupational Exposure/Biological Limit Values are referred to ANNEX-ADDITIONAL INFORMATION.xlsx](#)

#### 8.1.2 Information on currently recommended monitoring procedures:

American Conference of Governmental Industrial Hygienists (ACGIH), 2002. - П Δ 90/99, ФЕК 94/A/13-05-99. - OSHA -Occupational Safety and Health Administration; ACGIH -American Conference of Governmental Industrial Hygienists

#### 8.1.3 Applicable occupational exposure limit values and/or biological limit values for air contaminants (if formed when using the substance/mixture as intended):

[Applicable occupational exposure limit values and/or biological limit values for air contaminants are referred to ANNEX-ADDITIONAL INFORMATION.xlsx](#)

#### 8.1.4 DNEL / PNEC values:

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### 8.2 EXPOSURE CONTROLS:

#### 8.2.1 Appropriate engineering controls / Technical measures to prevent exposure:

##### Appropriate engineering controls:

Engineering controls are normally required when handling hot materials.

- Use process enclosures, local exhaust ventilation, or other controls to maintain airborne levels below recommended exposure limits.
- Avoid inhalation of high temperature fumes, contact of product with skin and eyes and manipulations may lead to ingestion.

Probability of occupational exposure: - Mainly due to failure during production and distribution of product as well as during maintenance and inspection of storage areas.

- The exposure can be minimized by appropriate control measures, such as establishing procedures, installing ventilation, use of personal protective equipment.

- Necessary to perform measurements for the quantitative determination of occupational exposure setting and assessment of risk in accordance with Article 4 of П Δ 338/2001.

(Subject to applicability): ATTENTION! Empty vessels or tanks may contain residue rich in hydrogen sulfide. Do not allow entrance if corresponding measurements of hydrogen sulfide and oxygen and strict safety measures have not taken place.

- Entrance is not permitted in confined spaces, when hydrogen sulfide concentration is >10 ppm and oxygen available < 20% v/v.

Probability of consumer's exposure: - Mainly due to failure during use of product.

- Necessary to ensure adequate ventilation and direct access to running water supply systems.

- Do not use gasoline, kerosene or solvents as cleaning agents for the skin in case of contact with the product.

##### Organisational measures to prevent exposure:

The design of work processes and organizational measures should be complied with Article 5 of П. 338/2001. - Compliance with the rules for personal hygiene and health surveillance in accordance with Article 10 of П. 338/2001 should be necessary.

#### 8.2.2 Personal protection equipment:

##### Respiratory protection:



Contaminant air concentrations determine the level of respiratory protection required. Use only approved respiratory equipment within the limits of the protection factors for that equipment. Use supplied air respirators when H2S concentrations are expected to exceed applicable workplace exposure levels. Do not use air purifying respiratory equipment when considering elevated H2S concentrations. Respiratory equipment must be selected on the basis of the maximum expected air concentration.

- CSN EN 136 - Respiratory protective devices - Full face masks - Requirements, testing, marking.

- DIN EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

BS EN 141:2000 - Respiratory protective devices. Gas filters and combined filters. Requirements, testing, marking

##### Eye protection:



Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. An eye wash station immediately available to the work area

- CSN EN 166 - Personal eye-protection – Specifications. - CR13464 - Guide to selection, use and maintenance of occupational eye and face protectors.

##### Hand protection:



When handling product at elevated temperatures, use long-cuffed leather or heat-resistant gloves. When product is at ambient temperatures, use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected.

- DIN EN 374-1 Protective gloves against chemicals and micro-organisms. - DIN EN 388 Protective gloves against mechanical risks. - DIN EN 407 Protective gloves against thermal risks (heat and/or fire). - DIN EN 420 Protective gloves - General requirements and test methods (includes Amendment A1:2009). Choose the glove material taking into consideration the penetration times, rates of diffusion and the degradation. Check if the gloves are in good condition before each use.

**Skin and body (including hands) protection:**



Use insulated, heat-resistant clothing when handling heated material. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.  
- CSN EN 340 Protective clothing - General requirements. - BS EN 465:1995 - Protective clothing. Protection against liquid chemicals. Performance requirements for chemical protective clothing with spray-tight connections between different parts of the clothing (type 4 equipment). - BS EN 466-1:1995 - Protective clothing. Protection against liquid chemicals. Performance requirements for chemical protective clothing with liquid-tight connections between different parts of the clothing (type 3 equipment). - BS EN 467:1995 - Protective clothing. Protection against liquid chemicals. Performance requirements for garments providing protection to parts of the body. - CSN EN 345 Use safety footwear

**8.2.3 Environmental exposure controls:**

Fume emissions to the atmosphere may occur during loading, transportation and the final use, mainly due to:

Increased temperature of the product during handling and use.

Mixing of final product with various additives in order to upgrade the properties having as a result the increased volatility of some of the lighter components. Required temperature control, so as to avoid overheating and minimize the release of fumes. Labelling of wind direction.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:**

[Physical and chemical properties are referred to ANNEX-ADDITIONAL INFORMATION.xlsx](#)

## 10. STABILITY AND REACTIVITY

**10.1 REACTIVITY:**

Not dangerous chemical reactions.

**10.2 CHEMICAL STABILITY:**

Stable under normal conditions.

**10.3 POSSIBILITY OF HAZARDOUS REACTIONS:**

Not dangerous chemical reactions.

**10.4 CONDITIONS TO AVOID:**

Heat, flames and sparks.

**10.5 INCOMPATIBLE MATERIALS:**

Strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:**

[Toxicological information is referred to ANNEX-ADDITIONAL INFORMATION.xlsx](#)

**Acute toxicity:**

The fumes of hot product may cause irritation to skin, eyes and respiratory system.

**Skin corrosion/irritation:**

Due to the high temperature storage and handling of the product, the main risk is burn. - Mild skin irritation. - Prolonged skin contact may cause skin irritation and / or dermatitis. - Exposure of the skin in high concentrations of fumes may cause irritation due to accumulation

**Serious eye damage /irritation:**

Risk of burns in contact of eyes with drops of hot product. - Mild eye irritation. - Contact with eyes may cause irritation. - Eye irritation may occur even if eyes come in contact with small pieces of cold product.

**Respiratory or skin sensitisation:**

Inhalation of high temperature vapours may cause irritation of the mucous membranes of the respiratory and cough. - Is unclear whether the gastrointestinal tract is irritated. - In storage areas of warm product, the presence of hydrogen sulfide is a serious risk because it is highly toxic. - Sulphide concentrations above statutory limits may cause headache, dizziness, nausea, irritation of the eyes and upper respiratory tract. - In hydrogen sulfide concentrations exceeding 500 ppm loss of consciousness is observed, while above 1000 ppm instantaneous death occurs. - Prolonged hydrogen sulphide inhalation familiarizes the sense of smell and results in the increased poisoning hazard in cases of increase of concentration.

**Germ cell mutagenicity:**

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**Carcinogenicity:**

This product may contain trace amounts of chemicals known to cause cancer

**Toxicity to reproduction:**

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**STOT - single exposure:**

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**STOT - repeated exposure:**

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**Aspiration hazard:**

Ingestion is highly improbable due to the nature of the product. If nevertheless happened, irritation of the gastrointestinal tract may be occurred, which may result in vomiting, with the risk of aspiration of fluid in the lungs that may lead to chemical pneumonia (possibly fatal).

## 12. ECOLOGICAL INFORMATION

### 12.1 TOXICITY:

**12.1.1 Aquatic toxicity:**

Spills into water ways may be harmful to organisms and bottom feeders.

**12.1.2 Sediment toxicity:**

In contact with aqueous recipient, minimum dispersion tendency is appeared and the primary physical action is to be absorbed as sediment.

**12.1.3 Terrestrial Toxicity:**

In case of soil contamination, the product may be appeared heavy and inert.

**Toxicity to birds:**

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### 12.2 PERSISTENCE AND DEGRADABILITY:

**12.2.1 Persistence Assessment:**

**12.2.2 Stability:**

**Hydrolysis:**

**Phototransformation in air:**

**Phototransformation in water and soil:**

**12.2.3 Biodegradation:**

This product is estimated to have a slow rate of biodegradation.

### 12.3 BIOACCUMULATIVE POTENTIAL:

This product is not expected to bioaccumulate through food chains in the environment.

### 12.4 MOBILITY IN SOIL:

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### 12.5 RESULTS OF PBT AND vPvB ASSESSMENT:

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS:

**13.1.1 Product / Packaging disposal:**

If the product must be disposed of/eliminated, this will be conducted according to the relative Legislation and the approval of the local authorities. Recover as much spilled material as possible for reuse or recycling.

**13.1.2 Waste treatment - relevant information:**

It may be necessary to contain and dispose as a Hazardous Waste.

**13.1.3 Sewage disposal - relevant information:**

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**13.1.4 Other disposal recommendations:**

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### 13.2 ADDITIONAL INFORMATION:

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## 14. TRANSPORT INFORMATION

**Pictogram(s):**



LAND TRANSPORT (Road/Rail) according to ADR/RID 2003, ΠΔ 104/99 and its amendments (ΦΕΚ 509B/2000 and 1232B/2001), Directives 94/55/EEC and 96/49/EEC and their amendments:

Transport Hazard Class(es): 9  
Packing group: III

INLAND WATERWAY TRANSPORT (AND(R)):

Transport Hazard Class(es): 9  
Packing group: III

MARINE TRANSPORT according to IMDG – IMO Code 2002 and ΠΔ 405/96:

Transport Hazard Class(es): 9  
Packing group: III

Marine pollutant: No

AIR TRANSPORT (ICAO-TI/IATA-DRG):

Transport Hazard Class(es): 9  
Packing group: III

NOT PERMITTED FOR TRANSPORT

[More details such as environmental hazards \(UN Model Regulations/2009\), limited quantities, packaging and IBCs, portable tanks and bulk containers, special precautions for users about transport information are referred to ANNEX-ADDITIONAL INFORMATION.xls](#)

## 15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

National Regulations:

Classification / labelling in accordance with Decision ΑΧΣ 378/94, ΦΕΚ 705B/94: Not required  
ΑΧΣ 47/ΦΕΚ431B/95, Υ.Α. 265/2002/2002 (ΦΕΚ 1214/Β/19.9.2002), Υ.Α. 195/2002/2002 (ΦΕΚ 907/Β/17.7.2002), Υ.Α. 378/94/1994 (ΦΕΚ 705/Β/20.9.1994), Αποφ.508/91/1991 (ΦΕΚ 886/Β/30.10.1991).

EU Regulations:

REGULATION (EC) 1907/2006, REGULATION (EC) No 1272/2008

15.2 CHEMICAL SAFETY ASSESSMENT:

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## 16. OTHER INFORMATION

KEY LITERATURE REFERENCES AND SOURCE OF DATA:

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RELEVANT R-PHRASES AND/OR H-STATEMENTS MAY BE:

None

TRAINING ADVICE:

The information of the present generalized Material Safety Data Sheet can be used for training purposes. - Ensure operators understand the hazard of oxygen enrichment.