

MATERIAL SAFETY DATA SHEET (MSDS)

CLASS 6.1 – TOXIC SUBSTANCES

1. CHEMICAL PRODUCT IDENTIFICATION

1.1 PRODUCT IDENTIFIER:

This data sheet is about substances and mixtures that are characterized as toxic substances which are included in Class 6.1, according UNITED NATIONS Committee of Experts on the Transport of Dangerous Goods (UN). Class 6.1 substances (toxic substances) are substances liable either to cause death or serious injury or to harm human health if swallowed or inhaled, or by skin contact.

The following products have been recorded in the present MSDS: Tetraethyl Lead

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)



GHS06

_ Acute toxicity (Acute Tox.): H330

H330: Fatal if inhaled.

H310: Fatal in contact with skin

H300: Fatal if swallowed

_ Specific target organ toxicity - single exposure (STOT SE): H373

H373: May cause damage to organs through prolonged or repeated exposure



GHS08

_ Reproductive toxicity (Repr.): H360Df

H360Df: May damage fertility or the unborn child



GHS09

_ Environmental Hazards (Env. Haz.): H400

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long lasting effects

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



_ Toxic (T): R26/27/28, R33

R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed, **R33:** Danger of cumulative effects

_ Toxic for reproduction (Repr. Cat.): R61, R62

R61: May cause harm to the unborn child, **R62:** Possible risk of impaired fertility



_ Dangerous for the environment (N): R50/53

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

2.2 LABELLING:

- According to GHS (EC Regulation 1272/2008)

Signal word: **D a n g e r**

Hazard pictograms (at least a subset): GHS06, GHS08, GHS09

Hazard statements (H) (at least a subset): H360Df, H330, H310, H300, H373, H400, H410 (For full text of H-statements: see SECTION 2.1)

Precautionary statements (P) (at least a subset):

Supplemental Hazard Information (EU) may be: -

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

Symbol(s) and indication(s) of danger (at least a subset): T Toxic

N Dangerous for the Environment

Risk Phrases (R) (at least a subset): R26/27/28, R33, R61, R62, R50/53 (For full text of R-phrases: see SECTION 2.1)

Safety phrases (S) (at least a subset): S53: Avoid exposure - obtain special instructions before use

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)

S60: This material and its container must be disposed of as hazardous waste

S61: Avoid release to the environment. Refer to special instructions/safety data sheet

Particular hazards to man and environment: -

2.3 OTHER HAZARDS (may be): -

PBT and vPvB assessment: -

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 MIXTURE:

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

Hazardous ingredients may be: -

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

WARNING BEFORE PREVENTION:

Necessary to isolate the area from all possible sources of ignition. The area where the casualty will be transferred, should be well ventilated.

FOLLOWING INHALATION:

If the casualty experiences difficulty breathing move to fresh air and keep him calm and in a position comfortable for breathing.

Place the casualty in recovery position with legs slightly raised. Loose tight clothing, collar, cover with a blanket. Obtain medical advice.

B. **If the victim is unconscious or conscious but breathes with difficulty:** Seek medical advice immediately. Place the casualty in the recovery position with legs slightly raised. Loose tight clothing, collar and cover with a blanket. Supply oxygen, check respiration and pulse. If necessary, administer cardio-pulmonary resuscitation.

C. **If the casualty does not breathe:** Give artificial Respiration. Obtain medical advice immediately. Place the casualty in the recovery position with legs slightly raised. Loose tight clothing, collar and cover with a blanket. When the respiration recurs, provide oxygen. If necessary, administer cardio-pulmonary resuscitation.

FOLLOWING SKIN CONTACT: Remove contaminated clothing. - Wash contaminated skin with soap and water.

FOLLOWING EYE CONTACT: Immediately flush with large amounts of water for at least 15 minutes, lifting upper and lower lids. - Remove contact lenses, if worn, while rinsing.

FOLLOWING INGESTION: Remove the casualty to a quiet, cool and well ventilated environment.

ATTENTION! Do not induce vomiting (hazard of chemical pneumonitis). Do not give anything to drink. Place the casualty in the recovery position with legs slightly raised. Loose tight clothing and cover with a blanket. Obtain medical advice immediately.

NOTES FOR THE DOCTOR: For frequent or potentially high exposure, the following are recommended before beginning work and at regular time after that:

1. Urine test

If symptoms develop or overexposure is suspected, the following are recommended:

1. Exam of the nervous system

2. Kidney function tests

3. Complete blood count

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

Inhalation: Headache, irritability and muscle and joint pain.

Ingestion: Lead poisoning with metallic taste, colic and muscle cramps.

Skin/Eye Contact: Irritation of the skin. Irritation of the eyes with possible loss of vision.

Exposure may cause kidney and brain damage and anaemia. Nervous system may be damaged.

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

5. FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable extinguishing media: Use dry chemical, carbon dioxide, alcohol-resistant foam or other foaming agent as extinguishers, as water may not be effective in fighting fires. Use water spray to cool fire-exposed containers.

Unsuitable extinguishing media: none

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific hazards arising from the chemical: Containers may explode in fire. vapours may travel to a source of ignition and flash back. - vapour is heavier than air and may travel a distance to cause a fire or explosion far from the source.

Hazardous combustion products: Poisonous gases are produced in fire

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTION, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

6.1.1 For non-emergency personnel:

Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapours. - If employees are required to clean-up spills, they must be properly trained and equipped.

6.1.2 For emergency responders:

Evacuate personnel and secure and control entrance to the area. - Wear positive pressure self-contained breathing apparatus (SCBA). - Wear appropriate protective gloves, clothing and goggles.

6.2 ENVIRONMENTAL PRECAUTIONS AND METHODS FOR CONTAINMENT AND CLEANING UP:

Land spillage: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash, cement powder, or commercial sorbents.

Spillages in water or at sea: Keep material out of water sources and sewers. Build dikes to contain flow as necessary.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

6.3.1 For containment:

Eliminate all ignition sources.

6.3.2 For cleaning up:

Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers. - Ventilate and wash area after clean-up is complete.

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: All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood.

Measures to protect the environment: -

7.1.2 Advice on general occupational hygiene:

Do not allow smoking and food consumption while handling. Thoroughly wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Technical measures and storage conditions: Keep away from incompatible materials, ignition sources and untrained individuals. Secure and label area. Protect containers/cylinders from physical damage.

Packaging materials: Tightly sealed container or cylinder

Requirements for storage rooms and vessels: Keep in a cool, well ventilated, dry, dark location in a tightly sealed container or cylinder.

Storage class: 6.1

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:

OSHA -Occupational Safety and Health Administration; ACGIH -American Conference of Governmental Industrial Hygienists; NIOSH -National Institute for Occupational Safety and Health.

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: Provide employees with hazard information and training. - Before entering a confined space, check to make sure that an explosive concentration does not exist. - Monitor airborne chemical concentrations. - Use engineering controls if concentrations exceed recommended exposure levels.

Organisational measures to prevent exposure: -

8.2.2 Personal protection equipment:

Respiratory protection:



Use of full face masks with combined filters in case of small leakages. In incidents of great release, use self-contained breathing apparatus and full suit (impermeable uniform, boots, gloves).

- Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.
- 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:



Wear indirect-vent, impact and splash resistant goggles when working with liquids. - Wear a face shield along with goggles when working with corrosive, highly irritating or toxic substances.

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

Hand protection:



Wear appropriate protective gloves to prevent skin exposure. - Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing material for your operation.

- 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:



your operation. - Rubber boots. - All protective clothing should be clean, available each day and put on before work.

- 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:

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:

It may react with oxidizing agents (such as Perchlorates, Peroxides, Permanganates, Chlorates, Nitrates, Chlorine, Bromine and Fluorine) and strong acids (such as Hydrochloric, Sulfuric and Nitric) to cause fires and explosions.

10.2 CHEMICAL STABILITY:

Stable

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Reactive under confinement, extreme caution.

10.4 CONDITIONS TO AVOID:

It may attack Rubber, some Plastics and Coatings.

10.5 INCOMPATIBLE MATERIALS:

Rust, Sulfuryl Chloride, Potassium Permanganate, Metals, metal Oxides, Combustibles.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

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

Acute toxicity: Highly toxic. Accumulative poison.

Skin corrosion/irritation: Irritant.

Serious eye damage /irritation: Irritant.

Respiratory or skin sensitisation: May be fatal if inhaled.
Germ cell mutagenicity: Possible mutagen.
Carcinogenicity: Experimental carcinogen.
Toxicity to reproduction: Danger of reproductive effects.
STOT - single exposure: Irritant.
STOT - repeated exposure: Irritant.
Aspiration hazard: May be fatal if ingested.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY: Hazardous to the environment
12.1.1 Aquatic toxicity: Toxic to aquatic organism
12.1.2 Sediment toxicity: -
12.1.3 Terrestrial Toxicity: -
Toxicity to birds: -

12.2 PERSISTENCE AND DEGRADABILITY:
12.2.1 Persistence Assessment: It persists in the environment.
12.2.2 Stability:
Hydrolysis: -
Phototransformation in air: -
Phototransformation in water and soil: -
12.2.3 Biodegradation: -

12.3 BIOACCUMULATIVE POTENTIAL: -

12.4 MOBILITY IN SOIL: -

12.5 RESULTS OF PBT AND vPvB ASSESSMENT: -

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. It may be necessary to contain and dispose as a Hazardous Waste.
13.1.2 Waste treatment - relevant information: Greatly contaminated materials must be incinerated.
13.1.3 Sewage disposal - relevant information: It must not be disposed of to sewers.
13.1.4 Other disposal recommendations: -

13.2 ADDITIONAL INFORMATION: -

14. TRANSPORT INFORMATION

Pictogram(s):



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

Transport Hazard Class(es): 6.1
Packing group: I

INLAND WATERWAY TRANSPORT (AND(R)):

Transport Hazard Class(es): 6.1
Packing group: I

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

Transport Hazard Class(es): 6.1
Packing group: I

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

Transport Hazard Class(es): 6.1
Packing group: I

[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: -

EU Regulations: -

15.2 CHEMICAL SAFETY ASSESSMENT: -

16. OTHER INFORMATION

KEY LITERATURE REFERENCES AND SOURCE OF DATA: -

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.