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ReAgent

CHLOROFORM TECHNICAL MSDS

According to Regulation (EC) No 1907/2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

| | |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRODUCT NAME | CHLOROFORM TECHNICAL |
| CAS-No. | 67-66-3 |
| EU INDEX NO. | 602-006-00-4 |
| EC No. | 200-663-8 |
| SUPPLIER | Reagent Chemical Services 18 Aston Fields Road Whitehouse Industrial Estate Runcorn Cheshire WA7 3DL T: 01928 716903 F: 01928 716425 E: info@reagent.co.uk |
| PRODUCT NO. | 2583 |
| APPLICATION | General chemical reagent |
| EMERGENCY TELEPHONE | Emergency Telephone : +44 (0) 1928 716903 Between 08.30 - 17.00 |

2 HAZARDS IDENTIFICATION

Harmful if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

CLASSIFICATION (67/548) R22, R38, R40, R48/20/22

ENVIRONMENT

Chloroform will evaporate readily when spilled onto land, but is immiscible with water therefore will separate in water systems as a lower layer.

PHYSICAL AND CHEMICAL HAZARDS

Will act as an anaesthetic when vapours in high concentration are inhaled. Do not use in enclosed spaces without respiratory protective equipment.

HUMAN HEALTH

See section 11 for additional information on health hazards.

3 COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|--------------|--------------|
| EU INDEX NO. | 602-006-00-4 |
| EC No. | 200-663-8 |
| CAS-No. | 67-66-3 |

4 FIRST-AID MEASURES

GENERAL INFORMATION

CAUTION! First aid personnel must be aware of own risk during rescue! Always consider any dangers in the vicinity before approaching to treat the casualty. First aid personnel must protect themselves with all necessary personal protective equipment during the assistance of casualties. When breathing is difficult, properly trained personnel may assist the casualty by administering oxygen. If casualty needs to be resuscitated avoid mouth to mouth contact, use a mechanical device such as a bag and mask to provide artificial respiration. Place unconscious person on the side in the recovery position and ensure breathing can take place. Do not give victim anything to drink if they are unconscious. If medical attention is required take this information sheet with the casualty.

INHALATION

Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. In case of severe exposure or if any discomfort continues get medical attention.

INGESTION

Do not induce vomiting. Immediately rinse mouth and drink plenty of water. Get medical attention immediately!

SKIN CONTACT

Immediately remove contaminated clothing and wash before re-use. Wash the skin immediately with soap and water. Unless contact has been slight, obtain medical attention.

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EYE CONTACT

Promptly wash eyes with plenty of water or eye wash solution while lifting the eyelids. If possible remove any contact lenses and continue to wash. Get medical attention.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

SPECIFIC HAZARDS

In case of fire, toxic and corrosive gases may be formed. Phosgene (COCl₂).

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Avoid inhalation of vapours and contact with skin and eyes. For personal protection, see section 8. Use respiratory protection if spillages occur in enclosed spaces.

ENVIRONMENTAL PRECAUTIONS

Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body. Do not discharge into drains, water courses or onto the ground.

SPILL CLEAN UP METHODS

Small Spillages: Absorb with sand or other inert absorbent. Large Spillages: Dam and absorb spillages with sand, earth or other inert material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. If there is a risk of vapours causing a pressure build up, allow the containers to vent before sealing. Wash spillage site well with water and detergent, be aware of the potential for surfaces to become slippery. Ventilate well. Wash thoroughly after dealing with a spillage.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid inhalation of vapours/spray and contact with skin and eyes. Do not eat, drink or smoke when handling.

STORAGE PRECAUTIONS

Store in closed original container at temperatures between 15°C and 25°C. Store away from direct sunlight and moisture. Store away from incompatible materials.

STORAGE CLASS

Chemical storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| Name | Std | TWA - 8 hrs | | STEL - 15 min | | Notes |
|----------------------|-----|-------------|----------------------------|---------------|--|-------|
| CHLOROFORM TECHNICAL | OES | 2 ppm(Sk) | 9.9 mg/m ³ (Sk) | | | |
| CHLOROFORM TECHNICAL | WEL | 2 ppm(Sk) | 9.9 mg/m ³ (Sk) | | | |

ENGINEERING MEASURES

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined workplace exposure limit (WEL) is not exceeded. Work in fume cupboard.

RESPIRATORY EQUIPMENT

Chemical respirator with organic vapour cartridge. CAUTION: Air purifying respirators do not protect the user in oxygen deficient atmospheres, use air supplied system.

HAND PROTECTION

Wear protective gloves. Viton rubber (fluor rubber). Polyethylene/Ethylene Vinyl Alcohol (PE/EVAL). Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION

Wear approved safety goggles.

OTHER PROTECTION

Wear suitable protective clothing as protection against splashing or contamination. Provide eyewash station and safety shower. If there is a risk of splashing then wear a face shield. Wear plastic apron and full length gloves if handling large amounts.

HYGIENE MEASURES

Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes wet or contaminated. When using do not eat, drink or smoke.

CHLOROFORM TECHNICAL**9 PHYSICAL AND CHEMICAL PROPERTIES**

| | | | |
|--------------------------------|----------------------------|------------------------|--------------|
| APPEARANCE | Liquid | | |
| COLOUR | Colourless | | |
| ODOUR | Characteristic Sweetish | | |
| SOLUBILITY | Slightly soluble in water. | | |
| BOILING POINT (°C) | 61 | MELTING POINT (°C) | - 63 |
| RELATIVE DENSITY | 1.48 | VAPOUR DENSITY (air=1) | 4.12 |
| VAPOUR PRESSURE | 21 kPa 20 | VISCOSITY | 0.56 mPas 20 |
| AUTO IGNITION TEMPERATURE (°C) | 982 | | |

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Contact with hot surfaces liberates phosgene.

HAZARDOUS POLYMERISATION

Will not polymerise.

MATERIALS TO AVOID

Alkali metals. Alkali earth metals. Powdered metal. Strong alkalis. Ketones Organic nitro compounds. Peroxy compounds. Nitrogen compounds Nitrogen oxides. Some plastics and rubber.

HAZARDOUS DECOMPOSITION PRODUCTS

Phosgene (COCl₂). Hydrogen chloride (HCl). Chlorine.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 908 mg/kg (oral rat)

INHALATION

Vapours may irritate throat and respiratory system and cause headache, dizziness and dullness. Rapid absorption which may lead to spasms and narcosis.

INGESTION

Nausea, vomiting.

SKIN CONTACT

Irritating to skin. Possible skin absorption.

EYE CONTACT

Irritating to eyes.

HEALTH WARNINGS

Embryotoxic effect probable Pregnant women should not be exposed to this product.

OTHER HEALTH EFFECTS

Carcinogen Category 3. May cause adverse mutagenic or teratogenic effects.

TARGET ORGANS

Long term exposure Kidneys. Liver.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal. Do not allow to enter drinking water, waste water or soil.

LC 50, 96 Hrs, FISH mg/l 171 (Pimephales promelas)

EC 50, 48 Hrs, DAPHNIA, mg/l 353 (Daphnia Magna)

MOBILITY

The substance is immiscible with water, it will sink below the water surface and form a layer on the bottom. It will be dispersed in water flow by the formation of droplets and transferred through water systems.

BIOACCUMULATION

Low bioaccumulation potential.

13 DISPOSAL CONSIDERATIONS

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GENERAL INFORMATION

Any waste material is classed as hazardous waste, it should only be disposed of through licenced waste handlers and treatment sites. Do not allow unauthorised disposal to the environment.

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

| | | | |
|----------------------|------------|------------------|-----------------------------|
| UK ROAD CLASS | 6.1 | | |
| PROPER SHIPPING NAME | Chloroform | | |
| UN NO. ROAD | 1888 | UK ROAD PACK GR. | III |
| ADR CLASS NO. | 6.1 | ADR CLASS | Class 6.1:Toxic substances. |
| ADR PACK GROUP | III | RID CLASS NO. | 6.1 |
| RID PACK GROUP | III | UN NO. SEA | 1888 |
| IMDG CLASS | 6.1 | IMDG PACK GR. | III |
| UN NO. AIR | 1888 | AIR CLASS | 6.1 |
| AIR PACK GR. | III | | |

15 REGULATORY INFORMATION

LABELLING



Harmful

RISK PHRASES

| | |
|-----------|--------------------------------------------------------------------------------------------------------|
| R22 | Harmful if swallowed. |
| R38 | Irritating to skin. |
| R40 | Limited evidence of a carcinogenic effect. |
| R48/20/22 | Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. |

SAFETY PHRASES

| | |
|--------|-----------------------------------------------|
| S2 | Keep out of the reach of children. |
| S36/37 | Wear suitable protective clothing and gloves. |
| P10 | For use in industrial installations only. |

EU DIRECTIVES

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

GUIDANCE NOTES

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. Approved Classification and Labelling Guide (CHIP 4)

NATIONAL REGULATIONS

Control of Substances Hazardous to Health Regulations 2002 (as amended)

16 OTHER INFORMATION

GENERAL INFORMATION

Under REACH Material Safety Datasheets (MSDS) are referred to as Safety Datasheets (SDS).

REVISION COMMENTS

Changes to sections 11, 12 and 15.

REVISION DATE: 05/03/2010

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REVISION DATE 05/03/2010

REV. NO./REPL. SDS GENERATED 3

SDS NO. 20801

SAFETY DATA SHEET STATUS

Approved.