

MATERIAL SAFETY DATA SHEET

R123

PRODUCT AND COMPANY IDENTIFICATION

Product Name R123
Other name 1,1 Dichloro-2,2,2-trifluoroethane
Trade Names R123
Company Identification:
African Oxygen Limited
23 Webber Street
Johannesburg
Tel No: (011) 490 0400
Fax No: (011) 490 0506

2. COMPOSITION /INFORMATION ON INGREDIENTS

Chemical Name CHC12CF3
CAS No: 00306-83-2
EC Nr. (from EINECS) 206-190-3
Synonyms 1,1 Dichloro-2,2,2-trifluoroethane
UN No: Not classified as
dangerous preparation

3. HAZARDS IDENTIFICATION

Main Hazards. All cylinders are portable gas containers, and must be treated as pressure vessels at all times. Uncontrolled release of compressed gas may cause physical injuries. Cylinders should never be exposed to excessive temperatures as this may cause rupturing of the cylinders with escape of the gas.

Adverse health effects. Uncontrolled release of compressed gas may cause physical injuries.

Swallowed: Unlikely exposure route. If swallowed discomfort in the gastrointestinal tract would result from rapid evaporation of liquid and consequent evolution of gas. Some of the effects of inhalation would be expected. Necrosis from freezing of tissue could occur.

Eye/Skin: May cause irritation and cold burns.

Inhaled: May replace oxygen in the inhaled air and cause asphyxiation. As the amount of oxygen inhaled is reduced from 21 to 14 volume % the pulse rate will accelerate and the rate and volume of breathing will increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is somewhat disturbed. As oxygen decreases from 14 to 10 volume % judgment becomes faulty, severe injuries may cause no pain. Muscular effort leads to rapid fatigue. Prolonged exposure to high concentrations may result in sensitization to the effects of adrenalin on the heart. Further reduction to 6% may cause nausea and vomiting. Ability to move may be lost. Permanent brain damage may result even after resuscitation from exposure to this low level of oxygen. Below 6% breathing is in gasps and convulsions may occur. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death will follow in a few minutes.

4. FIRST-AID MEASURES

Rescue personnel must use self-contained breathing apparatus when entering confined spaces and poorly ventilated areas.

Swallowed: Do not induce vomiting unless instructed to do so by Doctor.

Eye: Rinse immediately with plenty of water. If irritation persists contact doctor or poisons information center.

Skin: Remove contaminated clothing. Wash area with warm water. If irritation persists contact doctor or poison information center.

Inhaled: Remove from exposure. Check there is no obstruction to the airway if breathing is weak or has ceased and give artificial respiration, preferably using an oxygen resuscitator. Keep warm and rested. Seek

medical attention. Further treatment should be symptomatic and supportive.

5. FIRE FIGHTING MEASURES

Specific hazards: Exposure to fire may cause containers to rupture/explode. The gas is non-flammable.

Cool cylinders exposed to fire by applying water from a protected location. Do not approach cylinders suspected of being hot. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool.

Protective clothing: Exposed fire fighters should wear approved, self-contained breathing apparatus with full face masks.

6. ACCIDENTIAL RELEASE MEASURES

Personal Precautions: R123 is a simple asphyxiant, care should be taken when entering confined spaces where leaks have taken place. Wear self-contained breathing apparatus.

Methods for cleaning up: Ventilate area. Absorb excess liquid spillage on inorganic absorbent material such as fine sand, brick dust etc. Place spent absorbent in sealed packages and contact specialist waste disposal contractor. Ventilate area.

Environmental precautions: Try to stop release. Prevent from entering sewers, basements and work pits, or place where its accumulation can be dangerous.

7. HANDLING AND STORAGE

Cylinders should be stored upright, prevented from falling, in a secure area away from flammable or combustible materials; in a dry, well ventilated constructed of non-combustible material with firm level floor. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep container below 50 deg. C in a well ventilated place.

Use the "first in – first out" inventory system to prevent full cylinders from being stored for an

excessive period of time. Compliance of all relevant legislation is essential. Keep away from children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protection: Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes. Do not smoke while handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight: 152.9

Appearance/Colour: Colourless liquid.

Boiling point (at 101.32kPa): 27.6 deg. C

Vapour pressure (at 20 deg. C): 0.74 bar

Relative density, gas (Air = 1): 5.3

Relative density, liquid (water = 1): 1.46

Critical temperature: 185 deg. C

Odour: Ethereal. Poor warning properties at low concentrations

Other data: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10. STABILITY AND REACTIVITY

Stable under normal conditions.

Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

Incompatible materials: Alkali metals and may react with aluminium.

11. TOXICOLOGICAL INFORMATION

May cause dermatitis by skin contact.

May produce irregular heart beat and nervous symptoms.

LC₅₀ inh (rat/4h): 32 ml/l.

12. ECOLOGICAL INFORMATION

Covered by the 'Montreal Protocol'. May have damaging effects on ozone layer. When discharged in large quantities may contribute to the greenhouse effect.

Ozone depletion factor: 0.02 (R11 = 1)

Global warning factor: 93 (CO₂ = 1)

13. DISPOSAL CONSIDERATION

General: Must not be discharged to atmosphere.

Do not discharge into any place where its accumulation could be dangerous.

Refer to supplier's waste gas recovery programme.
Contact supplier if guidance is required

14. TRANSPORT INFORMATION

UN No: Not classified as dangerous preparation.

Class: Not Applicable

Labeling ADR: No symbol required. Cylinders should always be transported in the upright position, with the valve uppermost, and be firmly secured

Other transport information: Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers ensure that they are firmly secured and valve outlet cap, nut or plug (where provided) is correctly fitted. Valve protection device (where provided) is correctly fitted. There is adequate ventilation.

Compliances with applicable regulations.

15. REGULATORY INFORMATION

Number in annex I of Dir 67/548: Not include in Annex I

EC Classification: Not classified as dangerous preparation.

Symbols: No symbol required.

16. OTHER INFORMATION

Ensure all national/ regulations are observed.

Asphyxiant in high concentrations. Keep container in well-ventilated place. Do not breathe the gas. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Users of breathing apparatus must be trained. Contact with liquid may cause cold burns/frostbite.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the directives in their national laws. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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