

FLUORINE

0046

October 2001

CAS No: 7782-41-4 (cylinder)
 RTECS No: LM6475000 F₂
 UN No: 1045 Molecular mass: 38.0
 EC No: 009-001-00-0

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Not combustible but enhances combustion of other substances. Many reactions may cause fire or explosion.	NO contact with water, combustibles and reducing agents (see Chemical Dangers).	NO water. In case of fire in the surroundings: powder, carbon dioxide (see Notes).
EXPLOSION	Risk of fire and explosion on contact with many substances (see Chemical Dangers).		In case of fire: cool cylinder by spraying with water but avoid contact of the substance with water. Combat fire from a sheltered position. (See Notes).
EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Burning sensation. Cough. Sore throat. Shortness of breath. Laboured breathing. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
Skin	Redness. Pain. Skin burns. ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves. Protective clothing.	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
Eyes	Redness. Pain. Severe deep burns.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion			

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. Gas-tight chemical protection suit including self-contained breathing apparatus.	EU classification T+ Symbol C Symbol R: 7-26-35 S: (1/2-)9-26-36/37/39-45 UN classification UN Hazard Class: 2.3 UN Subsidiary Risks: 5.1, 8

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-20G1TOC NFPA Code: H 4; F 0; R 4; W	Fireproof if in building. Cool.

IMPORTANT DATA

Physical State; Appearance

YELLOW COMPRESSED GAS, WITH PUNGENT ODOUR.

Physical dangers

The gas is heavier than air.

Chemical dangers

The substance is a strong oxidant and reacts violently with combustible and reducing materials. Reacts violently with water producing toxic and corrosive vapours: ozone (see ICSC0068) and hydrogen fluoride (see ICSC0283). Reacts violently with ammonia, metals, oxidants, and many other materials, causing fire and explosion hazard.

Occupational exposure limits

TLV: 1 ppm as TWA; 2 ppm as STEL; (ACGIH 2004).

MAK: 1lb (not established but data is available); (DFG 2005).

Routes of exposure

The substance can be absorbed into the body by inhalation.

Inhalation risk

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

Effects of short-term exposure

The substance is very corrosive to the eyes, the skin and the respiratory tract. Inhalation of this gas may cause lung oedema (see Notes). The liquid may cause frostbite. The effects may be delayed. Medical observation is indicated.

PHYSICAL PROPERTIES

Boiling point: -188/C
Melting point: -219/C

Solubility in water: reaction
Relative vapour density (air = 1): 1.3

ENVIRONMENTAL DATA

NOTES

Reacts violently with fire extinguishing agents such as water.

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.

Do NOT spray water on leaking cylinder (to prevent corrosion of cylinder).

Turn leaking cylinder with the leak up to prevent escape of gas in liquid state.

Card has been partly updated in April 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information