

IRON PENTACARBONYL

0168

March 1995

CAS No: 13463-40-6
RTECS No: NO4900000
UN No: 1994

Iron carbonyl
 $C_5FeO_5 / Fe(CO)_5$
Molecular mass: 195.9

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE		STRICT HYGIENE!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Headache. Dizziness. Vomiting. Laboured breathing. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
Skin	MAY BE ABSORBED!	Protective gloves. Protective clothing.	First rinse with plenty of water, then remove contaminated clothes and rinse again. Refer for medical attention.
Eyes		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		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Do NOT absorb in saw-dust or other combustible absorbents. Personal protection: self-contained breathing apparatus.	UN classification UN Hazard Class: 6.1 UN Subsidiary Risks: 3 UN Pack Group: I Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-61GTF1-I NFPA Code: H2; F3; R1	Fireproof. Separated from strong oxidants, food and feedstuffs. Cool. Keep in the dark. Well closed. Keep under inert gas.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS TO YELLOW OR DARK RED VISCOUS LIQUID.

Physical dangers

The vapour is heavier than air and may travel along the ground; distant ignition possible.

Chemical dangers

May explode on heating. The substance may spontaneously ignite on contact with air. The substance decomposes on heating, on burning or under influence of light producing toxic gases including iron oxides and carbon monoxide (see ICSC0023). The substance is a strong reducing agent and reacts violently with oxidants.

Occupational exposure limits

TLV: 0.1 ppm as TWA, 0.2 ppm as STEL; (ACGIH 2004).
MAK: 0.1 ppm, 0.81 mg/m³; Peak limitation category: II(2); Pregnancy risk group: D; (DFG 2006).

Routes of exposure

The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20/C.

Effects of short-term exposure

The substance may cause effects on the lungs. Exposure far above the OEL may result in death. The effects may be delayed. Medical observation is indicated. See Notes.

Effects of long-term or repeated exposure

The substance may have effects on the liver, resulting in impaired functions.

PHYSICAL PROPERTIES

Boiling point: 103/C
Melting point: -20/C
Relative density (water = 1): 1.5
Solubility in water: none
Vapour pressure, kPa at 25/C: 4.7

Relative vapour density (air = 1): 6.8
Relative density of the vapour/air-mixture at 20/C (air = 1): 1.2
Flash point: -15/C c.c.
Auto-ignition temperature: 50/C
Explosive limits, vol% in air: 3.7-12.5

ENVIRONMENTAL DATA

NOTES

Environmental effects from the substance have not been investigated.
The symptoms of shortness of breath, cough, cyanosis, fever do not become manifest until after 12-36 hours.
No odour warning if toxic concentrations are present.
Do NOT take working clothes home.
Rinse contaminated clothes (fire hazard) with plenty of water.

Card has been partially updated in April 2005: see Occupational Exposure Limits, Emergency Response.
Card has been partially updated in July 2007: see 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