

Material Safety Data Sheet

Revision 9: 11/13/2006

Material Name: Draeger-Tubes™ (which are classified as dangerous goods UN1383)

ID: 4594928

*** Section 1 - Chemical Product and Company Identification ***
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Product Use: Detection of gases, measuring of gas concentrations.

Manufacturer Information

Dräger Safety AG & Co. KGaA
Revalstr. 1
23560 Lübeck
Germany

Distributor/Contact Information

Draeger Safety, Inc
101 Technology Drive
Pittsburgh, PA 15275-1057

Phone: (412) 787-8383
Fax: (412) 787-2207
Emergency # 1-800-424-9300 (CHEMTREC)

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

Relevant Products

Part No.	Trade Name	Part No.	Trade Name
81 01 601	Halogenated Hydrocarbons 100/a Detector Tube	81 03 121	Acetonitrile Detector Tube
81 03 361	Sulphurylfluoride Test	81 03 471	Sulphurylfluoride 1/a

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent*
Not Available	Inert carrier material and glass of the tube	>97
Not Available	Amine compounds	0-3
Not Available	Chromium (VI) salts	0-2
7439-89-6	Iron	0-2

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*based on the gross weight of the Draeger-Tube™.

The information contained in this MSDS is applicable to the hazardous contents of the Draeger-Tube™.

*** Section 3 - Hazards Identification ***

Emergency Overview

Product is a pyrophoric iron powder enclosed in a glass tube. Powder ignites upon contact with air. Broken tubes may ignite combustible materials. Contents of tube may be severely irritating to the eyes or skin. During use, tube becomes hot and may produce burns to the skin.

Hazard Statements

CAUTION! Contents of tube will ignite on contact with air. May ignite combustible materials. Contents of tube may be severely irritating to the eyes or skin.

Potential Health Effects: Eyes

Eye contact with contents of tube may produce severe eye irritation, including burns.

Potential Health Effects: Skin

During use, tubes become hot and may produce thermal burns to the skin. Opened tubes or broken tubes may have sharp edges capable of cutting skin. Contents from broken tubes may be corrosive to skin and cause severe irritation.

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Potential Health Effects: Ingestion

Ingestion of this product is unlikely. Ingestion of the contents of the tube may produce gastrointestinal irritation and disturbances.

Potential Health Effects: Inhalation

Inhalation of dusts during normal usage is unlikely because powder is enclosed in glass. Inhalation of dusts from broken tubes may produce respiratory irritation and discomfort.

HMS Ratings: Health: 2 Fire: 3 Physical Hazard: 0 Pers. Prot.: goggles, gloves

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention.

First Aid: Skin

For skin contact, flush with large amounts of water while removing contaminated clothing. If irritation persists, get medical attention.

First Aid: Ingestion

If material is ingested, immediately contact a physician or poison control center. Do not induce vomiting.

First Aid: Inhalation

If inhaled, immediately remove the affected person to fresh air. Call a physician if symptoms develop or persist.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not available

Upper Flammable Limit (UFL): Not available

Auto Ignition: Not available

Rate of Burning: Not available

General Fire Hazards

Glass tube contains pyrophoric iron which ignites upon contact with air. This material may ignite combustible materials which it comes in contact with. Tubes become hot during use and should not be used in potentially combustible atmospheres.

Hazardous Combustion Products

Irritating and toxic gases or fumes may be released during a fire.

Extinguishing Media

Use methods for the surrounding fire. Use water to cool fire-exposed containers and to protect personnel.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 2 Fire: 3 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Contain by any means necessary.

Clean-Up Procedures

Allow hot tubes to cool before disposal. Sweep up or shovel spilled material into appropriate container for disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material. Avoid contact with skin and eyes.

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*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid skin and eye contact with contents of tube. During use tubes become hot. Use caution to avoid burns. Avoid contact with sharp edges of glass. Wear appropriate personal protective equipment.

Do not use in explosive atmospheres. A combustible gas monitor should be used to qualify any questionably flammable or combustible area before using one of these tubes. Use with caution around flammable or combustible materials.

Wash thoroughly after handling.

Storage Procedures

Do not store this material in open or unlabeled containers. Do not store at temperatures exceeding 77°F (25°C). Do not store around flammable or combustible materials. The expiry date on the packaging must be considered.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

With normal handling of product there should be no exposure to contents. If contact does occur, keep exposure as low as possible. Use good industrial hygiene practices in handling this material.

B: Component Exposure Limits

Chromium (VI) salts (Not Available)

OSHA: 0.1 mg/m3 Ceiling

NIOSH: 0.001 mg/m3 TWA (as Cr)

Engineering Controls

Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields.

Personal Protective Equipment: Skin

Use impervious gloves. Heat resistant gloves are recommended when handling hot tubes.

Personal Protective Equipment: Respiratory

If ventilation is not sufficient to effectively prevent buildup of dusts, appropriate NIOSH approved respiratory protection must be provided.

Personal Protective Equipment: General

Use good industrial hygiene practices in handling this material.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Glass tubes containing gray powder	Odor:	None
Physical State:	Solid	pH:	Not applicable
Vapor Pressure:	Not applicable	Vapor Density:	Not applicable
Boiling Point:	Not applicable	Melting Point:	Not applicable
Solubility (H2O):	Insoluble	Specific Gravity:	7.9

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable within container. Powder contained within tube is unstable and ignites upon contact with air.

Chemical Stability: Conditions to Avoid

Do not use in explosive atmospheres. Powder ignites upon contact with air.

Incompatibility

Powder incompatible with air, water, oxidizers.

Hazardous Decomposition

Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition.

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Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

During use of the tube, hydrochloric/hydrofluoric acid is formed which makes the contents of the tube corrosive to skin and eyes. Contact may cause severe irritation including burns. Hydrogen chloride/fluoride or hydrochloric/fluoric acid is a corrosive acid. Chronic exposure may be associated with changes in pulmonary function, chronic bronchitis, dermatitis, erosion of dental enamel, conjunctivitis and upper respiratory tract abnormalities. Chronic inhalation of iron has resulted in mottling of the lungs, a condition referred to as siderosis. This is considered benign pneumoconiosis and does not ordinarily cause significant physiologic impairment.

B: Component Analysis - LD50/LC50

Iron (7439-89-6)

Oral LD50 Rat: 30 g/kg

Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

Chromium (VI) salts (Not Available)

NIOSH: potential occupational carcinogen

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

Environmental Fate

Adverse ecological effects cannot be excluded in the event of improper handling or disposal.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

If used tubes are discarded, wastes may be classified as: D002 (Corrosive Waste). If tube is discarded as shipped, wastes may be classified as: D001 (Ignitable Waste). Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Waste must be handled in accordance with all federal, state, provincial, and local regulations. Do not allow this material to drain into sewers/water supplies. Do not discard tube until pyrophoric iron has been expended during use and the tube has cooled to room temperature.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Pyrophoric metals, n.o.s. (Contains: Iron , mixture)

UN/NA #: UN1383 **Hazard Class:** 4.2 **Packing Group:** I

Required Label(s): SPONTANEOUSLY COMBUSTIBLE

Additional Info.: This product is forbidden for shipment by passenger or cargo aircraft. Exemptions maybe requested.

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*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No information available for the product.

B: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Iron	7439-89-6	Yes	No	No	No	No	No

Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Iron	7439-89-6	Yes	DSL	EINECS

*** Section 16 - Other Information ***

Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. EINECS = European Inventory of Existing Commercial Chemical Substances. EPA = Environmental Protection Agency. HEPA = High Efficiency Particulate Air. HMIS = Hazardous Material Information System. IARC = International Agency for Research on Cancer. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NA = Not available or Not Applicable. SARA = Superfund Amendments and Reauthorization Act. TLV = Threshold Limit Value. TSCA = Toxic Substance Control Act.

Contact: Product Manager

Contact Phone: 412-787-8383

This is the end of MSDS # 4594928