SAFETY DATA SHEET

Creation Date Oct-2013 **Revision Date** Oct-2018 **Revision Number** 2

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description:	**Hydrofluoric acid, 40% solution in water**
Product Grade:	SQ, ER
Cat No. :	Q29175, Q29555, Q29565, Q41645, Q41655
Synonyms	Hydrofluoric acid solution; Fluohydric acid; Fluoric acid
CAS No:	7664-39-3
Molecular Formula	H F
Reach Registration Number	-

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company	Thermo Fisher Scientific India Pvt. Ltd 403-404, B-wing, Delphi, Hiranandani Business Park, Powai, Mumbai 400076, INDIA.
E-mail address	laboratorysolutions@thermofisher.com

1.4. Emergency telephone number

India Toll Free: 18 00 22 22 30
Chemtrec US: (800)424-9300
Chemtrec EU: 001(202)483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Substances/mixtures corrosive to metal	Category 1 (H290)

Health hazards

Acute oral toxicity	Category 2 (H300)
Acute dermal toxicity	Category 1 (H310)
Acute Inhalation Toxicity - Vapors	Category 2 (H330)
Skin Corrosion/irritation	Category 1 A (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)

Environmental hazards
Based on available data, the classification criteria are not met

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H290 - May be corrosive to metals
H300 - Fatal if swallowed
H310 - Fatal in contact with skin
H330 - Fatal if inhaled
H314 - Causes severe skin burns and eye damage

Precautionary Statements

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P262 - Do not get in eyes, on skin, or on clothing
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Hydrogen fluoride	7664-39-3	EEC No. 231-634-8	40-60	Met. Corr. 1 (H290) Acute Tox. 2 (H300) Acute Tox. 1 (H310) Acute Tox. 2 (H330) Skin Corr. 1A (H314) Eye Dam. 1 (H318)
Water	7732-18-5	231-791-2	40-60	-

Reach Registration Number	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Inhalation	If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Move to fresh air. Immediate medical attention is required.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

This product contains hydrogen fluoride. Generous application of calcium gluconate gel to the affected skin may be indicated. For dermal exposure, the use of 2.5-33% calcium gluconate or carbonate gel or slurry has been recommended. The gel is either placed into a surgical glove into which the affected extremity is then placed or applied directly on the burn. This compound binds with the active fluorides in an insoluble form and limits burn extension and pain. Calcium chloride should not be used. Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Gaseous hydrogen fluoride (HF).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not ingest.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store in metal containers.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s): **EU** - Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement. **IRE -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

Component	European Union	The United Kingdom	France	Belgium	Spain
Hydrogen fluoride	TWA: 1.8 ppm 8 hr TWA: 1.5 mg/m³ 8 hr STEL: 3 ppm 15 min STEL: 2.5 mg/m³ 15 min	STEL: 3 ppm 15 min STEL: 2.5 mg/m³ 15 min TWA: 1.8 ppm 8 hr TWA: 1.5 mg/m³ 8 hr	TWA / VME: 1.8 ppm (8 heures). restrictive limit TWA / VME: 1.5 mg/m³ (8 heures). restrictive limit STEL / VLCT: 3 ppm. restrictive limit STEL / VLCT: 2.5 mg/m³. restrictive limit		STEL / VLA-EC: 3 ppm (15 minutos). STEL / VLA-EC: 2.5 mg/m³ (15 minutos). TWA / VLA-ED: 1.8 ppm (8 horas) TWA / VLA-ED: 1.5 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Hydrogen fluoride	TWA: 1.8 ppm 8 ore. Media Ponderata nel Tempo TWA: 1.5 mg/m³ 8 ore. Media Ponderata nel Tempo STEL: 3 ppm 15 minuti. Breve termine STEL: 2.5 mg/m³ 15 minuti. Breve termine	TWA: 1 ppm (8 Stunden). AGW - exposure factor 2 TWA: 0.83 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 1 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 1 ppm (8 Stunden). MAK TWA: 0.83 mg/m³ (8 Stunden). MAK TWA: 1	STEL: 3 ppm 15 minutos STEL: 2.5 mg/m³ 15 minutos Ceiling: 2 ppm TWA: 0.5 ppm 8 horas TWA: 1.5 mg/m³ 8 horas TWA: 2.5 mg/m³ 8 horas	STEL: 1 mg/m³ 15 minuten	TWA: 1.8 ppm 8 tunteina TWA: 1.5 mg/m³ 8 tunteina STEL: 3 ppm 15 minuutteina STEL: 2.5 mg/m³ 15 minuutteina Iho

		mg/m³ (8 Stunden). MAK Höhepunkt: 2 ppm Höhepunkt: 1.66 mg/m³ Haut			

Component	Austria	Denmark	Switzerland	Poland	Norway
Hydrogen fluoride	Haut MAK-KZW: 3 ppm 15 Minuten MAK-KZW: 2.5 mg/m³ 15 Minuten MAK-TMW: 1.8 ppm 8 Stunden MAK-TMW: 1.5 mg/m³ 8 Stunden	TWA: 1.8 ppm 8 timer TWA: 1.5 mg/m³ 8 timer	STEL: 2 ppm 15 Minuten STEL: 1.66 mg/m³ 15 Minuten TWA: 1 ppm 8 Stunden TWA: 0.83 mg/m³ 8 Stunden	STEL: 2 mg/m³ 15 minutach TWA: 0.5 mg/m³ 8 godzinach	TWA: 0.5 mg/m³ 8 timer STEL: 0.5 mg/m³ 15 minutter. Hud

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Hydrogen fluoride	TWA: 1.8 ppm TWA: 1.5 mg/m³ STEL : 3 ppm STEL : 2.5 mg/m³	TWA-GVI: 1.8 ppm 8 satima. TWA-GVI: 1.5 mg/m³ 8 satima. STEL-KGVI: 3 ppm 15 minutama. STEL-KGVI: 2.5 mg/m³ 15 minutama.	TWA: 1.8 ppm 8 hr. F TWA: 1.5 mg/m³ 8 hr. F STEL: 3 ppm 15 min STEL: 2.5 mg/m³ 15 min Skin	STEL: 3.0 ppm STEL: 2.5 mg/m³ TWA: 1.8 ppm TWA: 1.5 mg/m³	TWA: 1.5 mg/m³ 8 hodinách. Ceiling: 2.5 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Hydrogen fluoride	TWA: 1.8 ppm 8 tundides. TWA: 1.5 mg/m³ 8 tundides. STEL: 3 ppm 15 minutites. STEL: 2.5 mg/m³ 15 minutites.	TWA: 1.8 ppm 8 hr TWA: 1.5 mg/m³ 8 hr STEL: 3 ppm 15 min STEL: 2.5 mg/m³ 15 min	STEL: 3 ppm STEL: 2.5 mg/m³ TWA: 3 ppm TWA: 2.5 mg/m³	STEL: 2.5 mg/m³ 15 percekben. CK TWA: 1.5 mg/m³ 8 órában. AK lehetséges borön keresztüli felszívódás	STEL: 3 ppm 5 minutes STEL: 2.5 mg/m³ 5 minutes TWA: 0.7 ppm 8 klukkustundum. TWA: 0.6 mg/m³ 8 klukkustundum. Ceiling: 1.4 ppm Ceiling: 1.2 mg/m³

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Hydrogen fluoride	STEL: 3 ppm STEL: 2.5 mg/m³ TWA: 1.8 ppm TWA: 1.5 mg/m³	TWA: 1.8 ppm IPRD TWA: 1.5 mg/m³ IPRD STEL: 3 ppm STEL: 2.5 mg/m³	TWA: 1.8 ppm 8 Stunden TWA: 1.5 mg/m³ 8 Stunden STEL: 3 ppm 15 Minuten STEL: 2.5 mg/m³ 15 Minuten	TWA: 1.8 ppm TWA: 1.5 mg/m³ STEL: 3 ppm 15 minuti STEL: 2.5 mg/m³ 15 minuti	TWA: 1.8 ppm 8 ore TWA: 1.5 mg/m³ 8 ore STEL: 3 ppm 15 minute STEL: 2.5 mg/m³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Hydrogen fluoride	TWA: 0.1 mg/m³ 0590 STEL: 0.5 mg/m³ 0590	Ceiling: 2.5 mg/m³ TWA: 1.8 ppm TWA: 1.5 mg/m³ TWA: 2.5 mg/m³	TWA: 1.8 ppm 8 urah TWA: 1.5 mg/m³ 8 urah TWA: 2.5 mg/m³ 8 urah together with Fluoride ion STEL: 2.7 ppm 15 minutah STEL: 2.25 mg/m³ 15 minutah STEL: 2.5 mg/m³ 15 minutah together with Fluoride ion	Binding STLV: 2 ppm 15 minuter Binding STLV: 1.7 mg/m³ 15 minuter LLV: 1.8 ppm 8 timmar. LLV: 1.5 mg/m³ 8 timmar.	TWA: 1.8 ppm 8 saat TWA: 1.5 mg/m³ 8 saat STEL: 3 ppm 15 dakika STEL: 2.5 mg/m³ 15 dakika

Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Hydrogen fluoride			Fluorides: 3 mg/g creatinine urine	Fluorides: 2 mg/L urine pre-shift	Fluoride: 7.0 mg/g urine (end of shift measured

			beginning of shift Fluorides: 10 mg/g creatinine urine end of shift	Fluorides: 3 mg/L urine end of shift	as mg/g Creatinine) Fluoride: 4.0 mg/g urine (before beginning of next shift measured as mg/g Creatinine)

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Hydrogen fluoride			Fluoride: 7 mg/g creatinine urine end of exposure or work shift Fluoride: 4 mg/g creatinine urine prior to shift		

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS35/2 Hydrogen fluoride and fluorides in air Laboratory method using an ion selective electrode or ion chromatography

Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral		0.01 mg/kg/ bw/day		0.01 mg/kg bw/day
Dermal				
Inhalation	2.5 mg/m³			0.0015 mg/m³

Predicted No Effect Concentration (PNEC) No information available.

Fresh water	0.9 mg/l
Marine water	0.9 mg/l
Microorganisms in sewage treatment	51 mg/l
Soil (Agriculture)	11 mg/kg dw

8.2. Exposure controls

Engineering Measures
Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection	Goggles (European standard - EN 166)
Hand Protection	Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 480 minutes	0.35 - 0.7 mm	EN 374	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Neoprene	> 480 minutes	0.55 mm		
Nitrile rubber	< 60 minutes	0.38 mm		
PVC	< 120 minutes			

Skin and body protection Long sleeved clothing

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use

	appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced **Recommended Filter type:** Acid gases filter Type E Yellow conforming to EN14387 Particulates filter conforming to EN 143
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Environmental exposure controls	No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Colorless	
Physical State	Liquid	
Odor	pungent	
Odor Threshold	No data available	
pH	< 1.0	
Melting Point/Range	-35 °C / -31 °F	
Softening Point	No data available	
Boiling Point/Range	105 °C / 221 °F	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	2.21	(Air = 1.0)
Specific Gravity / Density	1.15-1.20	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Hydrogen fluoride	-1.4

Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

Molecular Formula	H F
Molecular Weight	20

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions Corrosive to metals. Contact with metals may evolve flammable hydrogen gas.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Metals. Cyanides. Sulfides. Bases. Fluorine.

10.6. Hazardous decomposition products

Gaseous hydrogen fluoride (HF).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;
Oral Category 2
Dermal Category 1
Inhalation Category 2

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrogen fluoride			LC50 = 0.79 mg/L (Rat) 1 h
Water	-		

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Hydrogen fluoride	LC50 = 660 mg/L, 48h (Leuciscus idus)	EC50 = 270 mg/L, 48h (Daphnia species)		

12.2. Persistence and degradability

Persistence Soluble in water, Persistence is unlikely, based on information available, Miscible with water.

Degradability Not relevant for inorganic substances.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Hydrogen fluoride	-1.4	No data available

12.4. Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not dispose of waste into sewer. Large amounts will affect pH and harm aquatic organisms. Solutions with low pH-value must be neutralized before discharge.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1790
14.2. UN proper shipping name HYDROFLUORIC ACID
14.3. Transport hazard class(es) 8
Subsidiary Hazard Class 6.1
14.4. Packing group II

ADR

14.1. UN number UN1790
14.2. UN proper shipping name HYDROFLUORIC ACID
14.3. Transport hazard class(es) 8

Subsidiary Hazard Class 6.1
14.4. Packing group II

IATA

14.1. UN number UN1790
14.2. UN proper shipping name HYDROFLUORIC ACID
14.3. Transport hazard class(es) 8
Subsidiary Hazard Class 6.1
14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Hydrogen fluoride	231-634-8	-		X	X	-	X	X	X	X	X
Water	231-791-2	-		X	X	-	X	-	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Hydrogen fluoride	WGK 2	

Component	France - INRS (Tables of occupational diseases)
Hydrogen fluoride	Tableaux des maladies professionnelles (TMP) - RG 32

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H290 - May be corrosive to metals
H300 - Fatal if swallowed
H310 - Fatal in contact with skin
H330 - Fatal if inhaled
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Legend

CAS - Chemical Abstracts Service
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japanese Existing and New Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - Volatile Organic Compounds

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.

Creation Date	Oct-2013
Next Revision Date	Oct-2023
Revision Summary	SDS section 1 updated and update of Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet