SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Creation Date 09-May-2012 **Revision Date** 22-May-2024 **Revision Number** 1

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

1.1. Product identifier

Product Description:	**Styrene, AR**
Cat No. :	**W00001**
Synonyms	Ethenylbenzene
Index No	601-026-00-0
CAS No	100-42-5
EC No	202-851-5
Molecular Formula	C8 H8

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

Recommended Use	Laboratory chemicals.
Sector of use	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
Erlenbachweg 2, 76870 Kandel, Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
Neuhofstrasse 11, CH 4153 Reinach
Tel: +41 (0) 56 618 41 11
https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

customers in Switzerland:
Tox Info Suisse Emergency Number: **145 (24hr)**
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
Chemtrec (24h) Toll-Free: 0800 564 402
Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable liquids	Category 3 (H226)

Health hazards

Aspiration Toxicity	Category 1 (H304)
Acute Inhalation Toxicity - Vapors	Category 4 (H332)
Skin Corrosion/Irritation	Category 2 (H315)
Serious Eye Damage/Eye Irritation	Category 2 (H319)
Reproductive Toxicity	Category 2 (H361d)
Specific target organ toxicity - (single exposure)	Category 3 (H335)
Specific target organ toxicity - (repeated exposure)	Category 1 (H372)

Environmental hazards

Chronic aquatic toxicity	Category 3 (H412)

Full text of Hazard Statements: see section 16

2.2. Label elements

Signal Word **Danger**

Hazard Statements

H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H332 - Harmful if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H361d - Suspected of damaging the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Styrene	100-42-5	EEC No. 202-851-5	>95	Flam. Liq. 3 (H226) Acute Tox. 4 (H332) Eye Irrit. 2 (H319) Skin Irrit. 2 (H315) STOT RE (H372) Repr. 2 (H361d) STOT SE 3 (H335) Asp. Tox. 1 (H304) Aquatic Chronic 3 (H412)

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Risk of serious damage to the lungs (by aspiration).

Self-Protection of the First Aider Use personal protective equipment as required.

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

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

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

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons
Water may be ineffective.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products
Carbon monoxide (CO), Carbon dioxide (CO_2).

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

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/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

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

7.2. Conditions for safe storage, including any incompatibilities

Keep refrigerated. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)	Class 3
Switzerland - Storage of hazardous substances	Storage class - SC 3 https://www.kvu.ch/de/themen/stoffe-und-produkte https://www.kvu.ch/fr/themes/substances-et-produits https://www.kvu.ch/it/temi/sostanze-e-prodotti

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s): **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Styrene		STEL: 250 ppm 15 min STEL: 1080 mg/m³ 15 min TWA: 100 ppm 8 hr TWA: 430 mg/m³ 8 hr	TWA / VME: 23.3 ppm (8 heures). indicative limit TWA / VME: 100 mg/m³ (8 heures). indicative limit TWA / VME: 1000 mg/m³ (8 heures). STEL / VLCT: 46.6 ppm. restrictive limit STEL / VLCT: 200 mg/m³. restrictive limit STEL / VLCT: 1500 mg/m³. Peau	TWA: 25 ppm 8 uren TWA: 108 mg/m³ 8 uren STEL: 50 ppm 15 minuten STEL: 216 mg/m³ 15 minuten Huid	STEL / VLA-EC: 40 ppm (15 minutos). STEL / VLA-EC: 172 mg/m³ (15 minutos). TWA / VLA-ED: 20 ppm (8 horas) TWA / VLA-ED: 86 mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Styrene		TWA: 20 ppm (8 Stunden). AGW - exposure factor 2 TWA: 86 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 20 ppm (8 Stunden). MAK TWA: 86 mg/m³ (8 Stunden). MAK Höhepunkt: 40 ppm Höhepunkt: 172 mg/m³	STEL: 40 ppm 15 minutos TWA: 20 ppm 8 horas		TWA: 20 ppm 8 tunteina TWA: 86 mg/m³ 8 tunteina STEL: 100 ppm 15 minuutteina STEL: 430 mg/m³ 15 minuutteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Styrene	MAK-KZGW: 80 ppm 15 Minuten MAK-KZGW: 340 mg/m³ 15 Minuten MAK-TMW: 20 ppm 8 Stunden MAK-TMW: 85 mg/m³ 8 Stunden	Ceiling: 25 ppm Ceiling: 105 mg/m³ Hud	STEL: 40 ppm 15 Minuten STEL: 170 mg/m³ 15 Minuten TWA: 20 ppm 8 Stunden TWA: 85 mg/m³ 8 Stunden	STEL: 100 mg/m³ 15 minutach TWA: 50 mg/m³ 8 godzinach	TWA: 25 ppm 8 timer TWA: 105 mg/m³ 8 timer STEL: 37.5 ppm 15 minutter. value calculated STEL: 131.25 mg/m³ 15 minutter. value calculated

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Styrene	TWA: 85.0 mg/m³ STEL : 215.0 mg/m³	kože TWA-GVI: 100 ppm 8 satima. TWA-GVI: 430 mg/m³ 8 satima. STEL-KGVI: 250 ppm 15 minutama. STEL-KGVI: 1080 mg/m³ 15 minutama.	TWA: 85 mg/m³ 8 hr. 100% pure crystalline enzyme 100% pure crystalline enzyme TWA: 20 ppm 8 hr. STEL: 40 ppm 15 min STEL: 170 mg/m³ 15 min		TWA: 100 mg/m³ 8 hodinách. Potential for cutaneous absorption Ceiling: 400 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Styrene	Nahk TWA: 20 ppm 8 tundides. TWA: 90 mg/m³ 8 tundides. STEL: 50 ppm 15 minutites. STEL: 200 mg/m³ 15 minutites.		STEL: 250 ppm STEL: 1050 mg/m³ TWA: 100 ppm TWA: 425 mg/m³	STEL: 172 mg/m³ 15 percekben. CK TWA: 86 mg/m³ 8 órában. AK	STEL: 25 ppm STEL: 105 mg/m³ Skin notation

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Styrene	STEL: 30 mg/m³ TWA: 10 mg/m³	TWA: 20 ppm IPRD TWA: 90 mg/m³ IPRD TWA: 10 ppm IPRD for planning of new facilities or replacing the old ones Oda STEL: 50 ppm STEL: 200 mg/m³			TWA: 12 ppm 8 ore TWA: 50 mg/m³ 8 ore STEL: 35 ppm 15 minute STEL: 150 mg/m³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Styrene	TWA: 10 mg/m³ 2399 MAC: 30 mg/m³	Ceiling: 200 mg/m³ TWA: 20 ppm TWA: 86 mg/m³	TWA: 20 ppm 8 urah TWA: 86 mg/m³ 8 urah STEL: 40 ppm 15 minutah STEL: 172 mg/m³ 15 minutah	Indicative STEL: 20 ppm 15 minuter Indicative STEL: 86 mg/m³ 15 minuter TLV: 10 ppm 8 timmar. NGV TLV: 43 mg/m³ 8 timmar. NGV Hud	

Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Styrene			Styrene: 0.02 mg/L venous blood Before the beginning of the next shift Styrene: 0.04 mg/L urine end of shift Mandelic acid and Phenylglyoxyl: 400 mg/g creatinine urine end of shift, preferably at end of workweek Mandelic acid: 300 mg/g creatinine urine Before the beginning of the next shift Styrene: 0.55 mg/L venous blood end of shift Mandelic acid: 800 mg/g	Mandelic acid plus Phenylglyoxylic acid: 400 mg/g Creatinine end of shift Styrene: 0.2 mg/L venous blood end of shift	Mandelic acid plus Phenylglyoxylic acid: 600 mg/g Creatinine urine (end of shift) Mandelic acid plus Phenylglyoxylic acid: 600 mg/g Creatinine urine (for long-term exposures: at the end of the shift after several shifts)

			creatinine urine end of shift Phenylglyoxylic acid: 240 mg/g creatinine urine end of shift Phenylglyoxylic acid: 100 mg/g creatinine urine prior to shift		

Component	Italy	Finland	Denmark	Bulgaria	Romania
Styrene		MAPGA: 1.2 mmol/L urine in the morning after a working day. MAPGA equals sum of urinary Mandelic and Phenylglyoxylic acids		Mandelic acid and Phenylglyoxylic acid - total: 600 mg/g Creatinine urine at the end of exposure or end of work shift, in remote exposure - after several work shifts	Mandelic acid: 800 mg/g Creatinine urine end of shift Mandelic acid: 300 mg/g Creatinine urine beginning of next shift Phenylglyoxylic acid: 100 mg/g Creatinine urine end of shift Styrene: 0.55 mg/L blood end of shift Styrene: 0.02 mg/L blood beginning of next shift

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Styrene		Mandelic acid: 0.8 g/g Creatinine urine end of shift Styrene: 0.55 mg/L blood end of shift	Mandelic acid and Phenylglycolic acid: 600 mg/g creatinine urine after all work shifts for long-term exposure Mandelic acid and Phenylglycolic acid: 600 mg/g creatinine urine end of exposure or work 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.
MDHS70 General methods for sampling airborne gases and vapours
MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography
MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)
See table for values

Predicted No Effect Concentration (PNEC)
See values below.

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the

workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.
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
Nitrile rubber Neoprene Natural rubber PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) 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. gloves with care avoiding skin contamination.

Respiratory Protection No protective equipment is needed under normal use conditions.

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: Organic gases and vapours filter Type A Brown conforming to EN14387

Small scale/Laboratory use Maintain adequate ventilation 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

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Colorless	
Odor	pungent	
Odor Threshold	No data available	
Melting Point/Range	-31 °C / -23.8 °F	
Softening Point	No data available	
Boiling Point/Range	145 - 146 °C / 293 - 294.8 °F	@ 760 mmHg
Flammability (liquid)	Flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 1.1 **Upper** 6.1	
Flash Point	31 °C / 87.8 °F	**Method -** No information available
Autoignition Temperature	490 °C / 914 °F	
Decomposition Temperature	No data available	

pH	No information available	
Viscosity	0.695 mPa.s at 25 °C	
Water Solubility	0.3 mg/L (20°C)	
Solubility in other solvents	Soluble: Alcohols, Diethyl ether	
Partition Coefficient (n-octanol/water)		
Component	**log Pow**	
Styrene	2.96	
Vapor Pressure	7 mbar @ 20 °C	
Density / Specific Gravity	0.906	
Bulk Density	Not applicable	Liquid
Vapor Density	1.22	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Molecular Formula	C8 H8
Molecular Weight	104.15
Explosive Properties	explosive air/vapour mixtures possible
Self-accelerating polymerisation temperature (SAPT)	52°C (packages up to 50kg) Inhibitor level > 8 ppm

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization may occur. Hazardous polymerization may occur upon depletion of inhibitor.
Hazardous Reactions	None under normal processing.

10.4. Conditions to avoid

Excess heat. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. Temperatures above 40°C.

10.5. Incompatible materials

Acids. Halogenated compounds. Copper alloys. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Styrene	-	LD50 > 2000 mg/kg (Rat)	LC50 = 11.7 mg/L (Rat) 4 h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;
Respiratory Based on available data, the classification criteria are not met
Skin Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Styrene				Group 2A

(g) reproductive toxicity; Category 2
Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

(i) STOT-repeated exposure; Category 1

Target Organs Ears, Central nervous system (CNS).

(j) aspiration hazard; Category 1

Other Adverse Effects The toxicological properties have not been fully investigated.

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Do not empty into drains. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Contains a substance which is:. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Styrene	LC50: 19.03 - 33.53 mg/L, 96h	EC50: 3.3 - 7.4 mg/L, 48h	EC50: 0.15 - 3.2 mg/L, 96h

	static (Lepomis macrochirus) LC50: 58.75 - 95.32 mg/L, 96h static (Poecilia reticulata) LC50: 6.75 - 14.5 mg/L, 96h static (Pimephales promelas) LC50: 3.24 - 4.99 mg/L, 96h flow-through (Pimephales promelas)	(Daphnia magna)	static (Pseudokirchneriella subcapitata) EC50: 0.46 - 4.3 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: = 0.72 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 1.4 mg/L, 72h (Pseudokirchneriella subcapitata)

Component	Microtox	M-Factor
Styrene	= 5.4 mg/L EC50 Photobacterium phosphoreum 5 min	

12.2. Persistence and degradability

Persistence Insoluble in water, Persistence is unlikely, based on information available.

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Styrene	2.96	13.5 dimensionless

12.4. Mobility in soil Spillage unlikely to penetrate soil The product is insoluble and floats on water The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces . Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility.

12.5. Results of PBT and vPvB assessment Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Styrene	Group I Chemical	High Exposure Concern

12.7. Other adverse effects

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. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

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

application specific.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains.

Switzerland - Waste Ordinance

Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600
https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN2055
14.2. UN proper shipping name STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es) 3
14.4. Packing group III

ADR

14.1. UN number UN2055
14.2. UN proper shipping name STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es) 3
14.4. Packing group III

IATA

14.1. UN number UN2055
14.2. UN proper shipping name STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es) 3
14.4. Packing group III

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user Inhibitors have been added to stabilize this product. Inhibitor levels should be maintained. Hazardous polymerization may occur upon depletion of inhibitor.

14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Styrene	100-42-5	202-851-5	-	-	X	X	KE-35342	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS

Styrene	100-42-5	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Styrene	100-42-5	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Styrene	100-42-5	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals
Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

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 .
Take note of Directive 94/33/EC on the protection of young people at work
Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Styrene	WGK2	

Component	France - INRS (Tables of occupational diseases)
Styrene	Tableaux des maladies professionnelles (TMP) - RG 84

Swiss Regulations
Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).
Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure

	814.81)		
Styrene 100-42-5 (>95)	Prohibited and Restricted Substances		

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H304 - May be fatal if swallowed and enters airways
H332 - Harmful if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H361d - Suspected of damaging the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New 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
Predicted No Effect Concentration (PNEC)
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 compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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.

Prepared By	Health, Safety and Environmental Department
Creation Date	09-May-2012
Revision Date	22-May-2024
Revision Summary	Initial Release.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

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End of Safety Data Sheet