

according to Regulation (EC) No 1907/2006

Styrene > 99 % for synthesis stabilized

Revision date: 21.04.2023

Product code: 24144

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Styrene > 99 % for synthesis stabilized

REACH Registration Number:	01-2119457861-32-XXXX
CAS No:	100-42-5
Index No:	601-026-00-0
EC No:	202-851-5

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

Use of the substance/mixture

Laboratory chemicals Industrial uses: Uses of substances as such or in preparations at industrial sites Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

.3. Details of the supplier of the safety data sheet
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1.3. Details of the supplier of the sa	ifety data sheet	
Company name:	AnalytiChem GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone:0203/5194-107/117
e-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	
<u>1.4. Emergency telephone</u> number:	For Hazardous Materials [or Dangerou Exposure, or Accident Call CHEMTRE 1-800-424-9300 Outside USA and Ca	C Day or Night Within USA and Canada:
	accepted)	- (

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 3; H226 Repr. 2; H361d Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 1; H372 Asp. Tox. 1; H304 Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

Danger

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word:



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Hazard statements

nful if inhaled. ses skin irritation.
ses skin irritation.
ses serious eye irritation.
pected of damaging the unborn child.
cause respiratory irritation.
ses damage to organs (auditory organs) through prolonged or repeated exposure.
be fatal if swallowed and enters airways.
nful to aquatic life with long lasting effects.

Precautionary statements

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
Do NOT induce vomiting.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with plenty of soap and water.
Store in a well-ventilated place. Keep cool.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula:	C6H5CHCH2
Molecular weight:	104,15 g/mol

Hazardous components

CAS No	lo Chemical name			Quantity
	EC No Index No REACH No			
Classification (Regulation (EC) No 1272/2008)				
100-42-5	-5 styrene			100 %
	202-851-5 601-026-00-0 01-2119457861-32-XXXX			
	Flam. Liq. 3, Repr. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1, Asp. Tox. 1, Aquatic Chronic 3; H226 H361d H332 H315 H319 H335 H372 H304 H412			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
Specific Conc. Limits, M-factors and ATE			
100-42-5	202-851-5	styrene	100 %
inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 6000 mg/kg			

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).



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SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated, saturated clothing immediately.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

After contact with skin

Wash immediately with: Water Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water. Observe risk of aspiration if vomiting occurs. Call a physician immediately.

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

Irritant Dizziness Vomiting Has degreasing effect on the skin.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2)

Foam Extinguishing powder

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids Hazardous combustion products In case of warming: Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes. Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers.



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AnalytiChem GmbH

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety. Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care. When using do not eat, drink, smoke, sniff. Keep container tightly closed. Use personal protection equipment. Use extractor hood (laboratory). Provide adequate ventilation. Do not breathe vapour.

Advice on protection against fire and explosion

Take action to prevent static discharges.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.



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Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Further information on storage conditions

Keep container tightly closed and dry. Keep cool. Protect from sunlight. storage temperature < +20°C

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
100-42-5	Styrene	20	85		TWA (8 h)	
		40	170		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
100-42-5	,	Mandelic acid plus phenylglyoxylic acid	400 mg/g	Creatinine	End of shift

DNEL/DMEL values

CAS No	Substance				
DNEL type Exposure route Effect Value				Value	
100-42-5	styrene				
Worker DNEL	, long-term	inhalation	systemic	85 mg/m³	
Worker DNEL	, acute	inhalation	systemic	289 mg/m³	
Worker DNEL	, acute	inhalation	local	306 mg/m ³	
Worker DNEL	, long-term	dermal	systemic	406 mg/kg bw/day	
Consumer DN	IEL, long-term	inhalation	systemic	10,2 mg/m ³	
Consumer DN	IEL, acute	inhalation	systemic	174,25 mg/m ³	
Consumer DN	IEL, acute	inhalation	local	182,75 mg/m ³	
Consumer DN	IEL, long-term	dermal	systemic	343 mg/kg bw/day	
Consumer DN	IEL, long-term	oral	systemic	2,1 mg/kg bw/day	



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PNEC values

CAS No	Substance		
Environmental compartment Value			
100-42-5	styrene		
Freshwater	Freshwater 0,028 mg/l		
Freshwater	Freshwater (intermittent releases) 0,04 mg/l		
Marine water 0,014 mg/l			
Freshwater sediment 0,614 mg/kg			
Marine sediment 0,307 mg/kg			
Micro-organisms in sewage treatment plants (STP) 5 mg/l		5 mg/l	
Soil 0,2 mg		0,2 mg/kg	

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles Face protection umbrella

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

Trade name/designation: KCL 890 Vitoject® Suitable material: FKM (fluoro rubber) 0,7 mm Wearing time with permanent contact: > 480 min

Trade name/designation: KCL 730 Camatril® Velours Suitable material: NBR (Nitrile rubber) 0,4 mm Wearing time with occasional contact (splashes): > 30 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Take off immediately all contaminated clothing and wash it before reuse. Wear fire resistant or flame retardant clothing. Wash hands and face before breaks and after work and take a shower if necessary. Draw up and observe skin protection programme.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation Filtering device with filter or ventilator filtering device of type: ABEK

Environmental exposure controls

Do not allow to enter into surface water or drains. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Danger of explosion



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

9.1. Information on basic physical and cher	
Physical state:	Liquid
Colour:	colourless
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	-31 °C
Boiling point or initial boiling point and	145 °C
boiling range:	
Flammability:	No data available
Lower explosion limits:	1,1 vol. %
Upper explosion limits:	8,9 vol. %
Flash point:	31 °C
Auto-ignition temperature:	490 °C
Decomposition temperature:	No data available
pH-Value:	No data available
Viscosity / kinematic:	No data available
Water solubility:	0,24 g/L
(at 20 °C)	-,,
Solubility in other solvents	
No data available	
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: 2,96
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	6 hPa
Vapour pressure:	No data available
Density (at 20 °C):	0,906 g/cm³
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	No data available
Particle characteristics:	No data available
9.2. Other information	
Information with regard to physical haz	ard classes
Explosive properties	
	along floors and form explosive mixtures with air.
Sustaining combustion:	Sustaining combustion
Self-ignition temperature	N 17 N 17
Solid:	No data available
Gas:	No data available
Oxidizing properties No data available	
Other safety characteristics	
Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	100%
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
	No data available



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Viscosity / dynamic: (at 20 °C)	0,762 mPa·s		
Flow time:	No data available		
Further Information			
No data available			

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger of polymerisation: In case of warming: Vapours may form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Oxidising agent, Chlorine (Iron.) Danger of polymerisation: Strong acid, peroxides, for example hydrogen peroxide, Oxygen

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

No data available

Further information

No data available

SECTION 11: Toxicological information

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

Toxicocinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if inhaled.

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
100-42-5	styrene	styrene				
	oral	LD50 mg/kg	> 6000	hamster, Syrian	Scandinavian Journal of Work, Environmen	Determination of acute toxicity of styre
	dermal	LD50 mg/kg	> 2000	Rat	Study report (2005)	OECD Guideline 402
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation).



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Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (styrene) Germ cell mutagenicity: Based on available data, the classification criteria are not met. Carcinogenicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (styrene)

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure. (styrene)

Aspiration hazard

May be fatal if swallowed and enters airways.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to humans.

Other information

No data available

Further information

Irritant Dizziness Vomiting Has degreasing effect on the skin.

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.



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CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
100-42-5	styrene						
	Acute fish toxicity	LC50	10 mg/l	96 h	Pimephales promelas	Ecotoxicology and environemtal safety 37	OECD Guideline 203
	Acute algae toxicity	ErC50	4,9 mg/l	72 h	Pseudokirchneriella subcapitata	Ecotoxicology and environemtal safety 37	EPA OTS 797.1050
	Acute crustacea toxicity	EC50	4,7 mg/l	48 h	Daphnia magna	Ecotoxicology and environemtal safety 37	OECD Guideline 202
	Crustacea toxicity	NOEC mg/l	1,01	21 d	Daphnia magna	Study report (2005)	OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	ca. 500	0,5 h	activated sludge of a predominantly domestic sewag	Institute for Health and Consumer Protec	OECD Guideline 209

12.2. Persistence and degradability

80 %; 20 d

OECD-301D

Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
100-42-5	styrene	2,96
BCF		

BCF

74

Species

calculated from log Kow

Source

Institute for Health

CAS No	Chemical name
100-42-5	styrene

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

Further information

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Send to a physico-chemical treatment facility under observation of official regulations. Do not mix with other wastes. Do not empty into drains.



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Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2055
14.2. UN proper shipping name:	STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3
Classification code:	F1
Special Provisions:	386
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	39
Tunnel restriction code:	D/E
Inland waterways transport (ADN)	UN 2055
14.1. UN number or ID number:	
14.2. UN proper shipping name:	STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es):	3
14.4. Packing group:	
Hazard label:	3
Classification code:	F1
Special Provisions:	386
Limited quantity:	5 L
Excepted quantity:	E1
Marine transport (IMDG)	
14.1. UN number or ID number:	UN 2055
14.2. UN proper shipping name:	STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es):	3
14.4. Packing group:	
Hazard label:	3
Special Provisions:	386
Limited quantity:	500 5 L
Excepted quantity:	E1
EmS:	F-E, S-D
	1-E, 0-D
Air transport (ICAO-TI/IATA-DGR)	
14.1. UN number or ID number:	
14.2. UN proper shipping name:	STYRENE MONOMER, STABILIZED
14.3. Transport hazard class(es):	3
14.4. Packing group:	
Hazard label:	3
Special Provisions:	A209
Limited quantity Passenger:	10 L
Passenger LQ:	Y344
Excepted quantity:	E1
IATA-packing instructions - Passenger:	355
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	366
IATA-max. quantity - Cargo:	220 L
Revision No. 1.03 - Replaces version: 1.02	IRI - en



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14.5. Environmental hazards			
ENVIRONMENTALLY HAZARDOUS:	No		
SECTION 15: Regulatory information			
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture			
EU regulatory information			
Restrictions on use (REACH, annex XVII):			
Entry 3, Entry 40, Entry 75			
Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS		
National regulatory information			
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juve work protection guideline' (94/33/EC). Observe employment restriction under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.		
Water hazard class (D):	2 - obviously hazardous to water		

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,10,11,12.

Relevant H and EUH statements (number and full text)

e	ievalit n allu Eun Stat	
	H226	Flammable liquid and vapour.
	H304	May be fatal if swallowed and enters airways.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H332	Harmful if inhaled.
	H335	May cause respiratory irritation.
	H361d	Suspected of damaging the unborn child.
	H372	Causes damage to organs (auditory organs) through prolonged or repeated exposure.
	H372	Causes damage to organs through prolonged or repeated exposure.
	H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.