

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name

MyProduct - SDS example, not valid for use

Product no.

Produkt 123456

REACH registration number

Not applicable

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

Relevant identified uses of the substance or mixture

Laboratory Chemicals (PC 21)

Use as laboratory reagent (PROC 15)

Scientific research and development (SU 24)

Wide dispersive indoor use of processing aids in open systems (ERC8a)

Uses advised against

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The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address

CHYMEIA ApS

Universitetsparken 2

DK-4000 Roskilde

tlf: +45 7240 1622

Contact person

Salgschef, Lars Bugge

E-mail

info@chymeia.com

SDS date

2016-02-23

SDS Version

1.0

1.4. Emergency telephone number

Use your national or local emergency number

See section 4 "First aid measures"

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Flam. Liq. 2; H225

Asp. Tox. 1; H304

Skin Irrit. 2; H315

Eye Irrit. 2; H319

STOT SE 3; H336

Repr. 2; H361

STOT RE 1; H372

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger

Hazard statement(s)

Highly flammable liquid and vapour. (H225)
 May be fatal if swallowed and enters airways. (H304)
 Causes skin irritation. (H315)
 Causes serious eye irritation. (H319)
 May cause drowsiness or dizziness. (H336)
 Suspected of damaging fertility or the unborn child. (H361)
 Causes damage to organs through prolonged or repeated exposure. (H372)

Safety statement(s)	General	-
	Prevention	Obtain special instructions before use. (P201). Do not breathe mist/vapours/fume/spray. (P260).
	Response	Get medical advice/attention if you feel unwell. (P314). IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310).
	Storage	Store locked up. (P405).
	Disposal	Dispose of contents/container to an approved waste disposal plant. (P501).

Identity of the substances primarily responsible for the major health hazards

toluene , styrene

2.3. Other hazards

This product contains teratogenic substances, which can cause long-term damage to the human embryo.
 This product contains substances that can give chemical pneumonia if inhaled. The symptoms of chemical pneumonia can appear after several hours.
 The product contains substances that can damage the reproductive system.
 This product contains an organic solvent. Repeated exposure to organic solvents can result in damage to the nervous system and inner organs, such as the liver and kidneys.

Additional labelling

-

Additional warnings

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VOC

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SECTION 3: Composition/information on ingredients

3.1/3.2. Substances/Mixtures

NAME:	toluene
IDENTIFICATION NOS.:	CAS: 108-88-3 EC-no: 203-625-9 REACH-no: 01-2119471310-51-xxxx Index-no: 601-021-00-3
CONTENT:	80-95%
CLP CLASSIFICATION:	Flam. Liq. 2, STOT RE 2, STOT SE 3, Skin Irrit. 2, Asp. Tox. 1, Repr. 2 H225, H304, H315, H336, H361, H373
NOTE:	S
NAME:	styrene
IDENTIFICATION NOS.:	CAS: 100-42-5 EC-no: 202-851-5 REACH-no: 01-2119457861-32-xxxx Index-no: 601-026-00-0
CONTENT:	10-15%
CLP CLASSIFICATION:	Flam. Liq. 3, Acute Tox. 4, STOT RE 1, STOT SE 3, Skin Irrit. 2, Eye Irrit. 2, Asp. Tox. 1, Repr. 2, Aquatic Chronic 3

According to EC-Regulation 1907/2006 (REACH)

NOTE: H226, H304, H315, H319, H332, H335, H361, H372, H412
S

(*) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.
S = Organic solvent

Other informations

ATEmix(inhale, vapour) > 20
Eye Cat. 2 Sum = Sum(Ci/S(G)CLi) = > 1 - 1.2
Skin Cat. 2 Sum = Sum(Ci/S(G)CLi) = 8 - 12
N chronic (CAT 4) Sum = Sum(Ci/M(chronic))*25*0.1*10^CAT4 = 0.32 - 0.48

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses and open eyes widely. Flush eyes with water or saline water(20-30°C) for at least 15 minutes. Seek medical assistance and continue flushing during transport.

Ingestion

In the case of ingestion, contact a doctor immediately and take this safety data sheet or the label from the material with you. If the person is conscious, give them water. DO NOT try to induce vomiting, unless this is recommended by a doctor. Hold head facing down so that no vomit runs back into the mouth and throat. Prevent shock by keeping the injured person warm and calm. Give mouth-to-mouth resuscitation if breathing stops. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Do not induce vomiting! If vomiting occurs, keep head facing down so that vomit does not get into the lungs. Call a doctor or ambulance. Symptoms of chemical pneumonia can appear after several hours. People who have swallowed the product should therefore be kept under medical attention for at least 48 hours.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

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

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

This product contains substances that can give chemical pneumonia if inhaled. The symptoms of chemical pneumonia can appear after several hours.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system. Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

According to EC-Regulation 1907/2006 (REACH)

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

IF exposed or concerned:
Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet.

S

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Water jets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

If the product is exposed to high temperatures, as in the case of fire, dangerous catabolic substances are produced. These are: Carbon oxides. Fire will result in thick black smoke. Exposure to catabolic products can damage your health. Fire fighters should use proper protection gear. Closed containers, which are exposed to fire, should be cooled with water. Do not let fire-extinguishing water run into sewers and other water courses.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

S

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours from waste material. Avoid direct contact with spilled substances. Stores that have not ignited must be cooled by water mist. Where possible, remove flammable materials. Make sure there is sufficient ventilation.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Cleaning should be done as far as possible using normal cleaning agents. Solvents should be avoided.

6.4. Reference to other sections

See section on "Disposal considerations" with regard to the handling of waste. See section on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid static electricity. Protect electrical equipment in accordance with current norms. To divert static electricity during transmission, containers must be grounded and connected by wire with the receiving containers. Do not use spark-forming tools.

Smoking, consumption of food or liquid, and storage of tobacco, food or liquids are not allowed in the workrooms. See section on 'Exposure controls/personal protection' for information on personal protection. Avoid direct contact with the product.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Must be stored in a cool and ventilated area, away from possible sources of combustion.

Beware, this chemical can form peroxides. The content of peroxide must be controlled regularly after opening for example every 6th month.

Storage temperature

Room temperature 18 to 23°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

styrene (EH40, 2005)

Long-term exposure limit (8-hour TWA reference period): 100 ppm | 430 mg/m³

Short-term exposure limit (15-minute reference period): 250 ppm | 1080 mg/m³

toluene (EH40, 2005)

Long-term exposure limit (8-hour TWA reference period): 50 ppm | 191 mg/m³

Short-term exposure limit (15-minute reference period): 100 ppm | 384 mg/m³

Comments: Sk (Sk = Can be absorbed through skin.)

DNEL / PNEC

DNEL (toluene): 384 mg/m³

Exposure: Inhalation

Duration of Exposure: Short term – Systemic effects - Workers

DNEL (toluene): 343 mg/m³

Exposure: Inhalation

Duration of Exposure: Short term – Local effects - Workers

DNEL (toluene): 192 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Systemic effects - Workers

DNEL (toluene): 192 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Local effects - Workers

DNEL (toluene): 384 mg/kgbw

Exposure: Dermal

Duration of Exposure: Long term – Systemic effects - Workers

DNEL (toluene): 226 mg/m³

Exposure: Inhalation

Duration of Exposure: Short term – Systemic effects - General population

DNEL (toluene): 226 mg/m³

Exposure: Inhalation

Duration of Exposure: Short term – Local effects - General population

DNEL (toluene): 56,5 mg/m³

Exposure: Inhalation

Duration of Exposure: Long term – Systemic effects - General population

DNEL (toluene): 8,13 mg/kgbw

Exposure: Oral

Duration of Exposure: Long term – Systemic effects - General population

DNEL (toluene): 226 mg/kgbw

Exposure: Dermal

Duration of Exposure: Long term – Systemic effects - General population

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values above.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values (see above). Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

According to EC-Regulation 1907/2006 (REACH)

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep damming materials near the workplace. If possible collect spillage during work.

Individual protection measures, such as personal protective equipment



Generally

Use only CE marked protective equipment.

Respiratory Equipment

Recommended: A. Class 2 (medium capacity). Brown

Skin protection

Use suitable protective clothing, which is of EN-approved type 6 and Category III.

Hand protection

Recommended: Nitrile rubber. Breakthrough time: > 480 minutes (Class 6)

Eye protection

Use safety glasses with a side shield.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Liquid
Colour	Colourless
Odour	Characteristic
pH	No data available.
Viscosity	0.7 mm ² /sek
Density (g/cm ³)	0.87

Phase changes

Melting point (°C)	-95
Boiling point (°C)	110
Vapour pressure	29 hPa

Data on fire and explosion hazards

Flashpoint (°C)	4
Ignition (°C)	535
Self ignition (°C)	No data available.
Explosion limits (Vol %)	1.2 - 8

Solubility

Solubility in water	Insoluble
n-octanol/water coefficient	2,65

9.2. Other information

Solubility in fat (g/L)	No data available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under the conditions, noted in the section on "Handling and storage".

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

Avoid static electricity. Do not expose to heat (e.g. sunlight), because it can lead to excess pressure.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reductants agents.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance	Species	Test	Route of exposure	Result
styrene	Rat	LD50	Oral	> 2000 mg/kg
styrene	Rat	LC50	Inhalation	> 12 mg/l (4h)
toluene	Rat	LD50	Oral	636 mg/kg
toluene	Rat	LC50	Inhalation	28,1 mg/l (4h)
toluene	Rabbit	LD50	Dermal	12,1 g/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

Causes damage to organs.

Aspiration hazard

May be fatal if swallowed and enters airways.

Long term effects

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

This product contains substances that can give chemical pneumonia if inhaled. The symptoms of chemical pneumonia can appear after several hours.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Neurotoxic effect: This product contains organic solvents, which can have an effect on the nervous system.

Symptoms of neurotoxicity can be: loss of appetite, headache, dizziness, whistling in the ears, tingling sensations in the skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer. The skin will then be more prone to absorb dangerous substances, e.g. allergens.

Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

Substance	Species	Test	Duration	Result
styrene	Fish	LC50	96h	25 mg/l
styrene	Daphnia	EC50	48h	4,7 mg/l
styrene	Algae	IC50	8d	67 mg/l
toluene	Fish	LC50	96h	5,8 mg/l
toluene	Daphnia	NOEC	72h	456 mg/l
toluene	Algae	IC50	72h	12 mg/l

12.2. Persistence and degradability

Substance	Biodegradability	Test	Result
styrene	Yes	Closed Bottle Test	80%

12.3. Bioaccumulative potential

Substance	Potential bioaccumulation	LogPow	BCF
styrene	No	2.96	No data available
toluene	No	2.65	No data available

12.4. Mobility in soil

styrene : Log Koc= 2.422424, Calculated from LogPow (Moderate mobility potential.).

toluene : Log Koc= 2.15 (Moderate mobility potential.).

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

-

Specific labelling

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Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

14.1 – 14.4

This product is covered by the conventions on dangerous goods.

ADR/RID

14.1. UN number	1294
14.2. UN proper shipping name	TOLUENE
14.3. Transport hazard class(es)	3
14.4. Packing group	II
Notes	-
Tunnel restriction code	D/E

IMDG

UN-no.	1294
Proper Shipping Name	TOLUENE
Class	3
PG*	II
EmS	F-E, S-D
MP**	No

According to EC-Regulation 1907/2006 (REACH)

Hazardous constituent	-
IATA/ICAO	
UN-no.	1294
Proper Shipping Name	TOLUENE
Class	3
PG*	II

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

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

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. Pregnant and nursing women must not be exposed to the effects of this product. The risk, and possible technical precautions or design of the workplace to avoid such risk, must therefore be evaluated.

Demands for specific education

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Additional information

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Sources

COUNCIL DIRECTIVE 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (CLP). EC regulation 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

- H225 - Highly flammable liquid and vapour.
- 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.
- H336 - May cause drowsiness or dizziness.
- H361 - Suspected of damaging fertility or the unborn child.
- H372 - Causes damage to organs through prolonged or repeated exposure.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H412 - Harmful to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

- PC 21 = Laboratory Chemicals
- PROC 15 = Use as laboratory reagent
- SU 24 = Scientific research and development
- ERC8a = Wide dispersive indoor use of processing aids in open systems

Other symbols mentioned in section 2

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Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

The safety data sheet is validated by

clan/chymeia

Date of last essential change (First cipher in SDS version)

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Date of last minor change (Last cipher in SDS version)

-