1. Product and company identification

Product identifier

Trade name: Styrolution® PS GPPS

This safety data sheet pertains to the following products:
Styrolution PS 1200
Styrolution PS 1201
Styrolution PS 1290
Styrolution PS 1291
Styrolution PS 1300
Styrolution PS 1301
Styrolution PS 1600
Styrolution PS 1611
Styrolution PS 1621
Styrolution PS 1700
Styrolution PS 1900
Styrolution PS 2600
Styrolution PS 2601
Styrolution PS 2610
Styrolution PS 3100
Styrolution PS 3101
Styrolution PS 3190
Styrolution PS 3600
Styrolution PS 3601
GPPS Generic
GPPS Off-Specification

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

General use: Polymer
Basic material for chemical industry processing

Details of the supplier of the safety data sheet

Company name: INEOS Styrolution America LLC
Street/POB-No.: 4245 Meridian Parkway, Suite 151
Postal Code, city: Aurora IL 60504
USA
WWW: www.styrolution.com
E-mail: infopoint.americas@styrolution.com
Telephone: +1 866 - 890 - 6353
Telefax: +1 866 - 890 - 6362

Dept. responsible for information:
Infopoint, Telephone: +1 (0) 815 - 423 - 1235
E-mail: infopoint.americas@styrolution.com

Emergency phone number

CHEMTREC
Telephone: 1 - 800 - 424 - 9300 (24 h)
(collect calls accepted)

2. Hazards identification

Emergency overview

Appearance: Form: solid, granulate
Color: colorless

Odor: weak

Classification: This substance is classified as not hazardous.

Regulatory status

This material is not considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Dust: Can cause skin, eye and respiratory tract irritation.
In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed
The melted product can cause severe burns.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: polymer
(C8 H8) *n
styrene-homopolymer, GPPS

CAS-Number: 9003-53-6

RTECS-Number: WL6475000

Additional information: Preparation does not contain dangerous substances above limits that need to be mentioned in this section according to applicable legislation.

4. First aid measures

In case of inhalation: Provide fresh air. Put victim at rest and keep warm.

Following skin contact: The melted product can cause severe burns.
Do not remove the product from the skin without medical assistance.
After contact with molten product, cool skin area rapidly with cold water. Consult physician.

After eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Consult an eye specialist in the event of irritation.

After swallowing: Do not induce vomiting. Rinse mouth with water.
Drink one or two glasses of water.
Never give an unconscious person anything through the mouth.

Most important symptoms/effects, acute and delayed

Dust: Skin irritation, eye irritations and redness

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:
> 536 °F

Auto-ignition temperature: > 800.6 °F

Suitable extinguishing media:
Water fog, foam.
Only in case of small fires: dry chemical powder, carbon dioxide, Sand, earth.

Extinguishing media which must not be used for safety reasons:
High power water jet

Specific hazards arising from the chemical

In case of fire may be liberated: Smoke, styrene-monomer, aldehydes and acids (organic), carbon monoxide and carbon dioxide (CO2).

Protective equipment and precautions for firefighters:
Wear self-contained breathing apparatus to prevent exposure to poisonous gases that may develop.

Additional information: Cool endangered containers with water jetspray.

6. Accidental release measures

Personal precautions: Provide adequate ventilation. Wear personal protection equipment. Do not breathe dust.

Environmental precautions:
Do not allow to penetrate into soil, waterbodies or drains.

Methods for clean-up: Avoid generation of dust. Remove all sources of ignition.
Collect dry and place in appropriate containers for disposal. Subsequent cleaning.

Additional information: Particular danger of slipping on spilled product on the ground.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe dust.
In the case of the formation of dust: Withdraw by suction.
Molten material: Avoid contact with the substance.

Precautions against fire and explosion:
Take precautionary measures against static discharges. Keep away from sources of ignition. Use grounding equipment. Use explosion-proof equipment and non-sparking tools/utensils. Avoid open flames.
In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed

Dust explosion risk: Class1

Storage

Requirements for storerooms and containers:
Store in a well-ventilated place. Keep container tightly closed.
Protect against heat /sun rays.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
9003-53-6	Styrolution® PS GPPS	USA: ACGIH: TWA	10 mg/m³
		USA: ACGIH: TWA	3 mg/m³
		USA: OSHA: TWA	15 mg/m³
		USA: OSHA: TWA	5 mg/m³
100-42-5	Styrene	OSHA: Ceiling	200 ppm
		USA: ACGIH: STEL	170 mg/m³; 40 ppm
		USA: ACGIH: TWA	85 mg/m³; 20 ppm
		USA: NIOSH: STEL	425 mg/m³; 100 ppm
		USA: NIOSH: TWA	215 mg/m³; 50 ppm
		USA: OSHA: TWA	100 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
100-42-5	Styrene	USA: ACGIH-BEI, urine	40 µg/l	Styrene in urine	end of exposure or end of shift
		USA: ACGIH-BEI, urine	400 mg/g creatinine	Mandelic acid + Phenylglyoxylic acid	end of exposure or end of shift

Additional information: The product contains very low levels of residual monomers and process chemicals (styrene and ethylbenzene) that may be evolved during thermal processing, along with possible decomposition products. As the identity and levels of these impurities evolved will depend upon the processing conditions (temperature etc.) it is the responsibility of the user to determine the adequacy of any protection or safety measures.

Engineering controls

Provide good ventilation in the work area. Additional controls are not normally necessary when handling the polymer.

Thermal extrusion: Provide local exhaust ventilation to ensure that the workplace exposure limit is not exceeded.
Use of respiratory protection may be necessary during maintenance activities.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Nitrile rubber - Layer thickness: 0.11 mm.
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

In case of melting: Impervious heat protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Leather
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: In case of dust formation: The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

General hygiene considerations:

Do not breathe vapors. Keep away from sources of ignition.
Wash hands before breaks and after work.

In case of dust formation: Particular danger of slipping on spilled product on the ground.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: solid, granulate Color: colorless
Odor:	weak
Odor threshold:	not available
pH value:	not applicable
Melting point/freezing point:	221 °F up to 275 °F
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	> 536 °F
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	not applicable
Vapor density:	No data available
Density:	at 68 °F: approx. 1050 kg/m³ (ISO 1183)
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	not relevant
Auto-ignition temperature:	> 800.6 °F
Thermal decomposition:	> 572 °F
Viscosity, dynamic:	not applicable
Explosive properties:	In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed
Oxidizing characteristics:	not oxidising
Ignition temperature:	> 752 °F
Bulk density:	approx. 600 kg/m³
Drop point/drop range:	174.2 °F up to 260.6 °F
Additional information:	Molar mass: 10000 - 300000 g/mol

10. Stability and reactivity

Reactivity: No data available

Chemical stability: Product is stable under normal storage conditions.

Possibility of hazardous reactions

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed

Conditions to avoid: Avoid open flames.
Avoid dust formation.

Incompatible materials: Strong oxidizing agents, Gasoline, aldehydes, ketone

Hazardous decomposition products:
In case of fire may be liberated: Smoke, styrene-monomer, aldehydes and acids (organic), carbon monoxide and carbon dioxide (CO2).

Thermal decomposition: > 572 °F

11. Toxicological information

Toxicological tests

Acute toxicity: LD50 Rat, oral: > 2000 mg/kg
LD50 Rabbit, dermal: > 2000 mg/kg

Toxicological effects: Acute toxicity (oral): Based on available data, the classification criteria are not met. Mild acute toxicity

Acute toxicity (dermal): Based on available data, the classification criteria are not met. Mild acute toxicity

Acute toxicity (inhalative): Based on available data, the classification criteria are not met. Mild acute toxicity. May cause irritations.

Skin corrosion/irritation: Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.

Eye damage/irritation: Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.

Sensitisation to the respiratory tract: Lack of data. The chemical structure of the polymer does not suggest a specific alert for such an effect.

Skin sensitisation: Based on available data, the classification criteria are not met. Not sensitising

Germ cell mutagenicity/Genotoxicity: Lack of data. The chemical structure of the polymer does not suggest a specific alert for such an effect.

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

Reproductive toxicity: Lack of data. The chemical structure of the polymer does not suggest a specific alert for such an effect.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.

Specific target organ toxicity (repeated exposure): Lack of data. Chronic toxic effects are not expected. The product has not been tested. The statement is derived from products of similar structure or composition.

Aspiration hazard: Lack of data.

Symptoms

Dust: Skin irritation, eye irritations and redness
The melted product can cause severe burns.

12. Ecological information

Ecotoxicity

Aquatic toxicity: no evidence of aquatic toxicity

Further details: Pellets may accumulate in the digestive systems of birds and aquatic life, causing injury and possible death due to starvation.

Mobility in soil

Product is not soluble in water.
Substance is heavier than water and sinks.
mobility in soil: low

Persistence and degradability

Further details: Biodegradation: Product is not readily biodegradable.
Degradation at UV-radiation/sunlight
Environmental half-life period: >=100 days (estimated)

Additional ecological information

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: With due observance of the regulations laid down by the local authorities, this must be brought to a suitable incineration plant/waste disposal site.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.

14. Transport information

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

Sea transport (IMDG)

Proper shipping name: Not restricted
Marine pollutant: no

Air transport (IATA)

Proper shipping name: Not restricted

Further information

No dangerous good in sense of these transport regulations.

15. Regulatory information

National regulations - U.S. Federal Regulations

Product:

TSCA Inventory: listed; EPA flags XU
TSCA HPVC: not listed
Carcinogen Status:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed

Styrene:

TSCA Inventory: listed
TSCA HPVC: not listed
Carcinogen Status:
IARC Rating: Group 2B
OSHA Carcinogen: not listed
NTP Rating: listed
Clean Air Act:
Hazardous Air Pollutants: Code XOV
SOCMI Chemical: yes
Clean Water Act:
Hazardous Substances: RQ 1000 lbs.
Other Environmental Laws:
CERCLA: RQ 1000 lbs.
RCRA Groundwater Monitoring: Methods 8020, 8240 / PQL 1, 5
SARA Title III Section 313, Toxic Release: Conc. 0.1% / Threshold Standard
NIOSH Recommendations:
Occupational Health Guideline: 0571

National regulations - U.S. State Regulations

California Proposition 65:
THIS PRODUCT(S) CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

National regulations - Canada

DSL: listed
DSL: Listed

National regulations - Great Britain

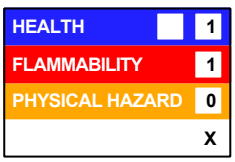
Hazchem-Code: -

16. Other information

Hazard rating systems:

NFPA Hazard Rating:
Health: 1 (Slight)
Fire: 1 (Slight)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 1 (Slight)
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor



Reason of change: Changes in section 1: Changes of product list EMEA
General revision

Date of first version: 8/8/2012

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.