

Safety data sheet

TOTAL PETROCHEMICALS POLYSTYRENE CHOC

Page : 1/11

Product :
PSTY-002

Version (en) nr : 10.2

Revised : 30/08/2011
Supersedes : 30/07/2010WARNING :
FOR STACKING
PALLETS, SEE
SECTION 7

1. Identification of the substance / mixture and of the company / undertaking

1.1. PRODUCT IDENTIFIER Polystyrene
 SDS number PSTY-002
 Name of the product POLYSTYRENE IMPACT
 CAS number 9003-55-8

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE AND USES ADVISED AGAINST

extrusion
 injection
 Recommended uses Recommended to professional users

1.3. DETAILS OF THE SUPPLIER OF SAFETY DATA SHEET

Trade name of the firm see below this page.

Email address: Petrochemicals.felr-sds@total.com
(Safety data sheet)

1.4. EMERGENCY TELEPHONE NUMBER

Emergency call TOTAL PETROCHEMICALS:
 • for English speaking countries: +44 (0) 1235 239 670
 • for Europe (in local languages): + 33 1 49 00 00 49
 • for Africa and Middle East: + 44 (0) 1235 239 671 • for China:
 + 86 10 5100 3039
 • for Asia Pacific (Hong-Kong, Singapore, Taiwan, Philippines, India,
 Vietnam, Sri Lanka, Japan, Korea, Malaysia, Indonesia, Thailand) :
 + 65 3158 1074

Official advisory body The UK National Poisons Emergency number is 0870 600 6266
 (Outside the UK: +44 870 600 6266)
 NB: these services are only available to health professionals
 IRL: National Poisons Information Centre
 PO Box 1297, Beaumont Hospital, Beaumont Road
 Dublin 9.
 Telephone: +353 (01) 837 9964 / +353 (01) 809 2566

2. Hazards identification

2.1. Classification of the substance

EC-GHS (CLP) Not classified according to the regulation EC 1272/2008 (EC-GHS) and ATP
 67/548/EEC & 1999/45/EC Not classified according to EEC directives 67/548/EEC (dangerous substances) and 1999/45/EC (dangerous preparations).



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Product :
PSTY-002

Version (en) nr : 10.2

Revised : 30/08/2011
Supersedes : 30/07/2010**Main hazards****Adverse human health effects**

Inhalation

fine dust may cause irritation of respiratory system and mucous.
if heated to more than 200°C, the product may form vapours or fumes which may cause irritation of respiratory tract and cause coughing and sensation of shortness of breath.

Skin contact

in contact with hot material, may cause severe thermal burns

Eye contact

fine dust may cause irritation to ocular mucous.

Ingestion

polyolefins are biologically inert.

Adverse environmental effects

because of its structure, the product should not be dangerous for aquatic life
non biodegradable

Adverse physicochemical effects

combustible if exposed to flames.
flowing product can create electrical charge, resulting sparks may ignite dust or cause an explosion in some concentration ranges.

Specific exposures

-

2.2. Label elements**EC-GHS (CLP)**

Not classified according to the regulation EC 1272/2008 (EC-GHS) and ATP

Pictogram(s)

-

WARNING :
FOR STACKING
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**2.3. Other hazards**

no information available

3. Composition / information on ingredients**3.1. Substances (chemical name)**

Polystyrene (HIPS)
High Impact Polystyrene
Benzene, ethenyl-, polymer with 1,3-Butadiene
Polystyrene : 90 to 98 %
Polybutadiene : 2 to 10 %

Chemical formula

(C₈H₈)_x - (C₄H₆)_y

CAS number

9003-55-8

EINECS or ELINCS number

the product is a polymer, following the European regulation, registration on the EINECS (European Inventory of Existing Commercial Chemical Substances) inventory is not required.

EC-GHS (CLP)

non required

67/548/EEC & 1999/45/EC

non required

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<u>Substances presenting a health hazard</u>	none
Impurities contributing to hazard	Styrene < 0.08 %

4. First-aid measures

4.1. Description of first aid measures

Route of exposure

Inhalation

in case of severe exposure to spray, fumes or vapors, move the affected person into fresh air.
if necessary, give oxygen
if breathing has stopped: administer artificial respiration.
in case of heavy or persistent disturbances, call a doctor or seek medical advice

Skin contact

exposure to splashing of hot product:
treat the affected part with cold water (by spraying or immersion).
no attempt should be made to detach molten product adhering to the skin or to remove clothing attached with molten material, the injured body part would risk being pulled out; usually the layer detaches itself after a few days.
in case of severe burns, seek hospital treatment

Eye contact

in case of irritation caused by fine dust: wash with copious volumes of water, until the irritation disappears.
exposure to splashing of hot product:
treat the eyes with cold water.
Get medical advice (ophthalmologist)

Ingestion

ingestion during handling is not likely.
remove material from mouth
do not induce vomiting.

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

refer to § 11 for more details on effects.

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

no information available

5. Fire - fighting measures

Fire-class regulation

A: Solid material fires, principally of organic nature, that burn with incandescence

Technical measures

stop the fire spreading.
call the fire brigade immediately.
evacuate non-essential personnel
protective clothing, goggles and self-contained breathing equipment should be made available for firemen.

5.1. Extinguishing media



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Suitable	for minor fires : carbon dioxide (CO ₂) or powder for more extensive fires : foam. water spray (mist) to cool the surfaces exposed to the fire.
Not to be used	do not use water jets (stick jets) for extinguishing fire since they could help to spread the flames
5.2. Special hazards arising from the substance	complete combustion, with an excess of oxygen forms: carbon dioxide (CO ₂) and water vapour. partial combustion, forms also: carbon monoxide (CO), soot and cracked products: aldehydes, ketones , Styrene , Toluene , Alcohol
5.3. Advice for firefighters	wear suitable breathing equipment, in case of risk of exposure to vapour or fumes.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	wear a suitable anti-dust respirator where exposure is likely, protective clothing must be worn including gloves goggles/spectacles
For emergency responders	wear suitable breathing equipment, in case of risk of exposure to vapour or fumes.

6.2. Environmental precautions

do not dispose off this product into the environment

6.3. Methods and material for containment and cleaning up

on soil	granules spilled on the floor can cause a risk of slipping on smooth surfaces. recover the spilled product by sweeping or suction; put it in containers to facilitate its disposal. dispose safely in accordance with local or national regulations.
on water	prevent the spilled material from spreading. if the material has been discharged into a stream or a sewerage system, inform the authorities refer to a specialist for waste disposal in a safe manner in accordance with local or national regulations.

6.4. refer to points 8 and 13

7. Handling and storage

Important refer to any national measures that may be relevant.

7.1. Precautions for safe handling



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Technical measures	all pneumatic transport equipment must be electrically earthed. avoid dust accumulation by use of filters in the pneumatic transport equipment.
fire and explosion prevention	Electrostatic charges may be generated when emptying sacks It is recommended that sacks are emptied away from explosive atmospheres Explosive atmospheres may result from the presence of flammable gas or from the evaporation of flammable liquids, such as some solvents Such explosive atmospheres are likely to occur, for example, above mixers in which the product is to be added As examples, the following procedures for emptying sacks are recommended: Fill the mixers using a 'rotating valve' or other system with suitable valves Fill mixers indirectly through an earthed metallic hopper or simply using first an earthed metallic container away from the explosive atmosphere and then emptying it into the mixer

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	store at ambient temperature and at atmospheric pressure in original packaging (plastic or cardboard boxes) or in silo made of appropriate material (aluminium, stainless steel, ...). do not store near highly flammable materials. keep away from light. store away from heating source. avoid static electricity build up with connection to earth. store in dry, well-ventilated area. store at ambient temperature, keep dry, away from sources of ignition
Storage of pallets	Pallets may be stacked on flooring in sound condition. however, when the pictorial warning as shown on the top of the safety data sheet is affixed to the pallet, the pallet must never be placed either on top of or below another pallet. N.B. :here the term pallet includes both the pallet and its load. when pallets are stored in racks, it should be checked whether the pallet is fit for stacking in the concerned racks
Incompatible materials	avoid contact with strong oxidizing materials
container	
Suitable	Polyethylene, paper bags, stainless steel
7.3. SPECIFIC USE(S)	Recommended to professional users
refer to point 8	

8. Exposure controls / personal protection

8.1. CONTROL PARAMETERS	refer to any national measures that may be relevant.
OCCUPATIONAL EXPOSURE LIMIT	inhalable dust particles: US (ACGIH-2009): TLV-8h TWA: 10 mg/m ³



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UK: HSE EH40/2005:
Long-term exposure limit (8-hour TWA reference period) : 10 mg/m³
(Total Inhalable Dust)
IRL(2002): OEL (8h): 10 mg/m³ (total inhalable)
ZA (2006): OEL (8h): 10 mg/m³ (inhalable particulate: PNOC)
respirable dust particles:
US (ACGIH-2009): TLV- 8h TWA: 3 mg/m³
UK: HSE EH40/2005:
Long-term exposure limit (8-hour TWA reference period) : 4 mg/m³
(Respirable Dust)
IRL(2002): OEL (8h): 4 mg/m³ (respirable)
ZA (2006): OEL (8h): 5 mg/m³ (respirable particulate: PNOC)
Styrene:
UK HSE EH40/2005:
Long-term exposure limit (8-h TWA reference period) : 100 ppm - 430
mg/m³
Short-term exposure limit (15-min reference period): 250 ppm - 1080
mg/m³
IRL(2002): OEL (8h): 20 ppm - 85 mg/m³ ; (15 min): 40 ppm - 170
mg/m³
US (ACGIH-2009): TLV-8h TWA: 20 ppm - 85 mg/m³ ; TLV-15min
STEL: 40 ppm - 170 mg/m³

8.2. EXPOSURE CONTROLS

Occupational exposure controls

Personal protection



Respiratory protection

in case of risk of overexposure to dust, vapour or fumes (during product processing), it is recommended that a local exhaust system is placed above the conversion equipment (a fume hood) and the working area must be properly ventilated.
wear a suitable anti-dust respirator
recommended filter type : P1

Hands protection

industrial gloves

Skin and body protection

where exposure is likely, protective clothing must be worn including gloves

Eye protection

goggles/spectacles

Other personal protection

safety non-slip shoes in areas where spills or leaks can occur.
shower and eye fountain available.

Industrial health measures

General use

local exhaust ventilation may be needed when working in a closed area
use working clothing.
do not store near food products.
When using, do not eat, drink or smoke.



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handle in accordance with good industrial hygiene and safety procedures

9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance

Physical state at 20°C solid (pellets)

Colour milky - white

Odour faint

Change in physical state at 1013 hPa

Softening point (°C) VICAT (ISO 306-A): 87 - 102 °C
VICAT (ISO 306-B): 76 - 94 °C

Flash point (ASTM D 1929)(°C) no information available

Thermal decomposition (°C) <= 250

Auto-ignition temperature (°C) 490 ca.

Explosion limits (kg/m³) :

Lower 0,015 (for polymer dust < 63 µm)

Vapour pressure at 20°C (hPa) -

Density, mass at 20°C (kg/m³) 1030 to 1060

Bulk density, mass at 20°C(kg/m³) 600 ca.

Solubility in water at 20°C (mg/l) insoluble

Soluble in organic solvents

pH value (concentrated product) not applicable

Viscosity (mm²/s) not applicable

9.2. OTHER INFORMATION no information available**10. Stability and reactivity****10.1. REACTIVITY** combustible if exposed to flames.**10.2. CHEMICAL STABILITY** stable under normal operating conditions of storage, handling and use**10.3. POSSIBILITY OF HAZARDOUS REACTIONS**

dust may form an explosive mixture with air, ignited by sparks or sources of ignition.

10.4. CONDITIONS TO AVOIDavoid proximity or contact with flames or sparks
avoid overheating the product.
do not heat to temperatures exceeding 250 °C
keep away from light.**TOTAL PETROCHEMICALS**a division of NV Petrofina SA
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10.5. INCOMPATIBLE MATERIALS

avoid contact with strong oxidizing materials

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

complete combustion, with an excess of oxygen forms: carbon dioxide (CO₂) and water vapour.

partial combustion, forms also: carbon monoxide (CO), soot and cracked products: aldehydes, ketones ...

Advice to prevent explosion

all pneumatic transport equipment must be electrically earthed.
avoid dust accumulation by use of filters in the pneumatic transport equipment.
thoroughly ventilate the working place.
flowing product can create electrical charge, resulting sparks may ignite dust or cause an explosion in some concentration ranges.
in case of pneumatic alimentation, feed the extruders by aspiration, use preferably nitrogen as carrier gas

11. Toxicological information

11.1. Information on toxicological effects

ACUTE TOXICITY

Ingestion

because of its composition, the product should be considered as practically not harmful

LOCAL EFFECT

Inhalation

dust may cause irritation of respiratory system.
if heated to more than 200°C, the product may form vapours or fumes which may cause irritation of respiratory tract and cause coughing and sensation of shortness of breath.

Skin contact

because of its composition, the product should be considered practically as not irritating
thermal decomposition products are produced at elevated temperatures and these may be irritating
in contact with hot material, may cause severe thermal burns

Eye contact

because of its composition, the product should be considered practically as not irritating
fine dust may cause irritation to ocular mucous.
splashing of molten droplets causes ocular tissue burns.
thermal decomposition products are produced at elevated temperatures and these may be irritating

SPECIFIC EFFECTS

no particular preoccupation for man

12. Ecological information

Information on ecological effects

avoid losses to the environment whenever possible.

12.1. TOXICITY

because of its low solubility, the product should not be dangerous for aquatic life



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Biodegradation

BOD 5 (gO₂/g)

soil and sediments

persistent in the environment

this substance is slowly biodegradable

below the detection limit

Product is expected to undergo degradation in the presence of sunlight

12.3. BIOACCUMULATIVE POTENTIAL

potential bioaccumulation of the product in environment is very low

12.4. MOBILITY

water / air

there is a slow loss by evaporation

volatile organic compound (VOC) content of this product is < at 0.5 % weight

soil and sediments

because of its physico-chemical properties, the product has a low soil mobility

water

the product has a density > 1000 kg/m³, it sinks in water.

because of its low solubility, the product should not be dangerous for aquatic life

12.5. Results of PBT and vPvB assessment

non required

13. Disposal considerations**13.1. Waste treatment methods**

according to local regulations.

authorized disposal

as refuse for reprocessing

do not dispose off by means of sinks, drains or into the immediate environment

may be used as fuel in suitably designed installations.

incinerate with household refuse in a municipal solid waste incinerator plan.

Industrial waste number EC

07 02 13, 16 01 19, 17 02 03 & 20 01 39: plastics

API (Association of Plastic Industry) Code

6 : PS: Polystyrene

14. Transport information**Road (ADR) / Rail (RID)**

Not restricted for transport.

UN Number

not applicable

Inland waterways (ADN)

Not restricted for transport.

Marine (IMO)

Not restricted for transport.

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Air transport (ICAO / IATA)

Not restricted for transport.

15. Regulatory information

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

Germany

Wassergefährdungsklasse

NWG: non-hazardous to waters

Registration

These registration entries are for polymers only. For additives, please refer to TOTAL PETROCHEMICALS who will provide the necessary certification

the product is a polymer, following the European regulation, registration on the EINECS (European Inventory of Existing Commercial Chemical Substances) inventory is not required. listed on the United States TSCA (Toxic Substances Control Act) inventory listed on the Canadian DSL (Domestic Substances List) inventory. listed on the Japanese ENCS (Existing & New Chemical Substances) inventory.

listed on the AICS (the Australian Inventory of Chemical Substances). listed on the Korean ECL (Existing Chemical List) inventory.

listed on the Filipino PICCS (Philippine Inventory of Chemicals and Chemical Substances) inventory.

listed on the People's Republic of China register: CRC-SEPA (Chemical Registration Center for Chinese State Environmental Protection Administration)

15.2. Chemical safety assessment

non required

16. Other information

Training advice

The use of this product requires specific training.
The user must receive all product information in order to handle the product safely
(personal protection equipment and best practice standards)

Further information

no information available

Safety data sheet conforms to the Regulation (EU) N° 1907/2006



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This information applies to the PRODUCT AS SUCH and conforming to specifications of TOTAL PETROCHEMICALS.

In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear.

The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. However the revision of some data is in progress.

Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes.

The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive.

It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product.

It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product. (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

The (*) indicate the changes made with respect to the previous version.

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