

## 1. Chemical product and company identification

Substance name : Shodex STANDARD SL-105,SM-105,SH-75  
 Reference No. : SD-008UN  
 Recommended use(s) : Calibration standard for size exclusion chromatography  
 Restrictions on use : For analytical use only. Please contact our department in charge when using for purposes other than those recommended.  
 Company/undertaking identification : Resonac Corporation  
 Address : Tokyo Shiodome Building, 1-9-1 Higashi-Shimbashi, Minato-ku, Tokyo , 105-7325,Japan  
 Department name : Functional Chemicals Business Unit Specialty Chemicals Department  
 Tel. : +81-3-6263-8112  
 Email : rec\_shodex@resonac.com  
 Emergency number : +81-44-322-6844 (night / holiday)( Resonac Corporation Kawasaki Plant)

## 2. Hazards identification

GHS classification: The mixture does not meet the criteria for GHS classification..

GHS label elements: No label elements applicable

## 3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Name	Concentration (%)	CAS-No.
polystyrene	100	9003-53-6

## 4. First aid measures

### First aid measures

inhalation : Remove person to fresh air and keep comfortable for breathing.  
 Get medical advice/attention as needed.  
 If vomiting occurs, turn the head to the side, and take care to prevent suffocation.  
 skin contact : Wash off immediately with soap and plenty of water.  
 If necessary seek medical advice.  
 eye contact : Immediately wash eyes with plenty of water for 15 minutes.  
 Get immediate medical advice/attention.  
 Open the eyelids, immediately flush the eyes with plenty of water and move the eyeballs in all directions so that the water can be flushed to every corner of the eyeballs.  
 ingestion : Get immediate medical advice/attention.  
 Rinse mouth thoroughly with water.  
 It is recommended to give plenty of water for drinking and induce vomiting if possible.

## 5. Fire fighting measures

Suitable extinguishing media : Spray water, carbon dioxide, foam, dry chemical.  
 Unsuitable extinguishing media : Not available  
 Specific hazards arising from the chemical : There is a risk of ignition or explosion of dust.  
 Special protective actions for fire fighters : Extinguish the fire from the upwind direction.

Keep unauthorized personnel away from the surrounding of fire site.  
Evacuate unauthorized personnel to a safe place.  
If possible, remove containers from hazardous area.  
Take appropriate measures to prevent substances that affect the environment from flowing out through fire fighting wastewater, etc.  
Avoid fire fighting wastewater flowing into the environment.  
Wear appropriate respiratory protective equipment.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear appropriate protective equipment during handling.

### Environmental precautions

Environmental precautions : Take care to prevent the spillage from being discharged into rivers, etc. so as to avoid impact on the environment.

### Methods and Equipment for Containment and Cleaning up

For containment : Immediately eliminate nearby ignition sources and hot objects.  
Sweep up the spillage and recover it into a sealed container.  
Prohibit unauthorized personnel from approaching.

Prevention Measures for Secondary Accidents : Prepare an appropriate fire extinguisher in case of a fire.

## 7. Handling and storage

Precautions for safe handling : Wear appropriate protective equipment during handling.  
Do not get in eyes, on skin, or on clothing.  
After handling, thoroughly wash hands, face, etc., and rinse mouth.  
Avoid exposure to strong oxidants.  
Obtain special instructions before use.  
Pay full attention to avoid dust scattering.  
Handle in a well-ventilated place.

Conditions for safe storage, including any incompatibilities : Store in a well-ventilated cool place.  
Avoid high temperature and humidity, direct sunlight and moisture, store in a dry and cool place.Keep container tightly closed.

## 8. Exposure controls / Personal protection equipment

This product is subject to the laws of the country or territory in which it is used

**Appropriate engineering controls** : Use closed devices, equipment or local exhaust ventilation system to operate as much as possible.  
Eye-washing and shower equipment should be installed near the workplace.

### Protective equipment

Respiratory protection : A dust-protective mask  
Hand protection : Protective gloves made of rubber  
Eye protection : Protection glasses(Regular type, Side plate type, Goggles type), face shield  
Skin and body protection : Protection clothes, Protection boots, Protection apron

## 9. Physical and chemical properties

Physical state : Solid  
Colour : colourless,clear  
Odour : odourless  
pH : No data available

Melting point	:	240°C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	345 – 360°C
Auto-ignition temperature	:	427°C
Decomposition temperature	:	No data available
Flammability	:	No data available
Vapour pressure	:	No data available
Relative density	:	1.04~1.13
Relative gas density	:	No data available
Solubility	:	Water: insoluble Soluble in benzene, pyridine, dichloromethane, etc.
Partition coefficient n-octanol/water (Log Pow)	:	Insoluble
Explosive limits (vol %)	:	No data available
Viscosity, kinematic:	:	No data available
Particle size	:	No data available
Particle size distribution	:	No data available
Particle shape	:	No data available
Particle aspect ratio	:	No data available
Particle specific surface area	:	No data available

### 10. Stability and reactivity

Reactivity	:	No data available
Chemical stability	:	The product is stable at normal handling and storage conditions.
Possibility of hazardous reactions	:	Be careful of contact with oxidants.
Conditions to avoid	:	Overheating. Sparks. Open flame.
Incompatible materials	:	Oxidizing agent.
Hazardous decomposition products	:	No data available.

### 11. Toxicological information

<b>Acute toxicity (oral)</b>	:	classification not possible
<b>Acute toxicity (dermal)</b>	:	classification not possible
<b>Acute toxicity (inhalation)</b>	:	Not classified

<b>polystyrene (9003-53-6)</b>	
Acute toxicity (dust)	Rat LC50 (30min) 56.6g/m3 (RTECS) , Mouse LC50 (10min) 120mg/m3 (DOSE)

**Skin corrosion/irritation** : classification not possible

**Serious eye damage/irritation** : Not classified

<b>polystyrene (9003-53-6)</b>	
Serious eye damage/eye irritation	Eye contact (dust): May cause mild eye irritation (MSDS-OHS) Eye contact (fume): May cause eye irritation or lacrimation (MSDS-OHS)

**Respiratory sensitization** : classification not possible  
**Skin sensitization** : classification not possible

**Germ cell mutagenicity** : classification not possible

**Carcinogenicity** : Not classified

<b>polystyrene (9003-53-6)</b>	
Carcinogenicity	IARC Group 3 (Not classifiable as to its carcinogenicity to humans)

**Reproductive toxicity** : classification not possible

**STOT-single exposure** : Not classified

<b>polystyrene (9003-53-6)</b>	
Specific target organ toxicity (single exposure)	Mouse, Intratracheal toxicity test: Effects on the respiratory tract; effects on dehydrogenase, etc. (MSDS-OHS) Inhalation exposure (dust); high concentrations: May cause irritation or cough (MSDS-OHS) Inhalation exposure (fume): May cause irritation of the nose, throat, or lung (MSDS-OHS)

**STOT-repeated exposure** : Not classified

<b>polystyrene (9003-53-6)</b>	
Specific target organ toxicity (repeated exposure)	Rat, 2-week intravenous toxicity test: Abnormal liver function test results; effects on protein metabolism (RTECS) Rat, Long-term inhalation toxicity test (dust): Growth retardation; changes in red or white blood cells, Increased liver weight; mild pneumonia (MSDS-OHS)

**Aspiration hazard** : classification not possible

## 12. Ecological information

### Ecotoxicity

**Hazardous to the aquatic environment, short-term (acute)** : classification not possible

**Hazardous to the aquatic environment, long-term (chronic)** : Not classified

### Persistence and degradability

<b>polystyrene (9003-53-6)</b>	
Persistence and degradability	Biodegradation test (28 days): Non-biodegradable (J-CHECK)

### Bioaccumulative potential

<b>polystyrene (9003-53-6)</b>	
Bioaccumulation	Bioconcentration test (common carp, 8 weeks) low Bioconcentration potential (J-CHECK)

### Mobility in soil

No additional information available

### Hazardous to the ozone layer

**Ozone** : classification not possible

## 13. Disposal considerations

- waste materials : Assure disposal complies with applicable regulations. Dispose of contents/container in accordance with licensed collector's sorting instructions. Empty the packaging completely prior to disposal.
- Contaminated container and packaging : Completely remove the contents prior to disposal of empty containers and packaging in accordance with local/national/international regulations.

## 14. Transport information

### International Regulations

#### Overland transport(UN RTDG)

- UN-No(UN RTDG) : Not applicable
- Proper Shipping Name (UN RTDG) : Not applicable
- Packing group (UN RTDG) : Not applicable

Transport hazard class(es) (UN RTDG) : Not applicable

**Transport by sea(IMDG)**

UN-No. (IMDG) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Packing group (IMDG) : Not applicable  
Transport hazard class(es) (IMDG) : Not applicable

**Air transport(IATA)**

UN-No. (IATA) : Not applicable  
Proper Shipping Name (IATA) : Not applicable  
Packing group (IATA) : Not applicable  
Transport hazard class(es) (IATA) : Not applicable

Marine pollutant : Not applicable

MFAG-No : It is recommended to handle in accordance with 171.  
Other information : No supplementary information available

**15. Regulatory information**

This product is subject to the laws of the country or territory in which it is used

**16. Other information**

Others : This Material Safety Data Sheet  
Applies to SL-105, SM-105 and SH-75 kit components.  
SL-105 (10 types), SM-105 (10 types), SH-75 (7 types)

The information in this SDS was obtained from sources which we believe to be reliable, but no warranty or representation regarding the accuracy or completeness is hereby given. All materials may present unknown hazards and should be used with extreme caution. Final determination of suitability of any material is the sole responsibility of the user. Users must perceive information here only as an addition to the information collected by themselves and must decide for itself the suitability and completeness of information from all sources to ensure the correct use and disposal, the safety and health of employees and customers and environmental protection.