

1. Chemical product and company identification

Substance name : Shodex STANDARD P-82
 Synonyms : P-800, P-400, P-200, P-100, P-50, P-20, P-10, P-5
 Reference No. : SD-009UN
 Recommended use(s) : Calibration standrd 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
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2. Hazards identification

GHS classification

Health hazards Reproductive toxicity Category 1B

[GHS label elements]

Hazard pictograms



Signal word : Danger

Hazard statements : May damage fertility or the unborn child. (H360)

Precautionary statements

Prevention : Obtain special instructions before use. (P201)
 Do not handle until all safety precautions have been read and understood. (P202)
 Wear protective gloves/protective clothing/eye protection/face protection. (P280)

Response : IF exposed or concerned: Get medical advice/attention. (P308+P313)

Storage : Store locked up. (P405)

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

3. Composition/information on ingredients

Distinction of substance or mixture : Mixture

Name	Concentration (%)	CAS-No.
Pullulan	≥ 90	9057-02-7
Methanol	< 1	67-56-1
Water	< 10	7732-18-5

4. First aid measures

First aid measures

- inhalation : If a large amount of powder or dust is inhaled, remove victim to fresh air. If the victim is vomiting, turn the head to the side to prevent suffocation. Get medical advice/attention if needed.
- skin contact : Wash off thoroughly with plenty of water and soap if needed.
If skin irritation or rash occurs: Get medical advice/attention.
- eye contact : Immediately rinse with clean running water for several minutes (at least 15 minutes is recommended). Remove contact lenses if present and easy to do. To ensure thorough washing, open the eyelids to allow water flush all over the eyeball/lid. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- ingestion : Rinse inside the mouth thoroughly with water and immediately get medical advice/attention.
If possible, it is preferable to induce vomit by drinking plenty of water.

5. Fire fighting measures

- Suitable extinguishing media : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog). Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
- Unsuitable extinguishing media : No information available
- Firefighting instructions : Evacuate personnel to a safe area. Unauthorized persons are not admitted. Extinguish the fire from windward. Avoid raising dust. Prevent fire-fighting water from entering environment. Move undamaged containers from immediate hazard area if it can be done safely.
- Personal protection (Emergency response) : Do not enter fire area without proper protective equipment, including respiratory protection.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Wear suitable personal protection.
Ventilate area and avoid creating airborne dust.

Environmental precautions

- Environmental precautions : Be careful for the products not to spill out in rivers and not to cause influence on environment.

Methods and Equipment for Containment and Cleaning up

- For containment : Carefully sweep scattered product into a suitable empty sealable container for disposal.
- Prevention Measures for Secondary Accidents : Ready appropriate extinguishing media.

7. Handling and storage

Handling

- Technical measures : Handle product only in closed system or provide appropriate exhaust ventilation. Use explosion-proof equipment. Prevent the build-up of electrostatic charge. Wear suitable protective clothing, gloves and eye or face protection. Pay attention never forming dust. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Avoid contact during pregnancy/while nursing. Prevent shock/impact. Wash contaminated clothing before reuse. Wash hands thoroughly after handling.
- Precautions for safe handling : Avoid contact with strong oxidisers.
- Hygiene measures : Wash contaminated clothing before reuse.
Wash ... thoroughly after handling.
- Local and general ventilation : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof ventilating equipment.

Storage

- Storage conditions : Store in a cool, well-ventilated place. Keep away from heat. Keep out of direct sunlight.
- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
Use explosion-proof electrical equipment, ventilation equipment, and lighting equipment.

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** : Install local exhaust ventilation to keep the concentration of airborne dust below the recommended limits.
Install hand, eye wash facilities and safety shower.

Protective equipment

- Respiratory protection : If exposure to dust is expected: wear dust mask in accordance
- Hand protection : Rubber gloves, etc.
- Eye protection : Wear appropriate protective glasses with side shields, safety goggles or facemask if required.
- Skin and body protection : Protective rubber gloves and clothing (apron/long sleeved clothing, boots, etc.) are recommended when handling this substance.

9. Physical and chemical properties

- Physical state : Solid
- Appearance : Powder
- Colour : white
- Odour : odourless
- Odour threshold : No data available
- pH : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available
- Flash point : >55°C(Estimate)
- Auto-ignition temperature : ca. 280°C
- Decomposition temperature : No data available
- Flammability : No data available
- Vapour pressure : No data available
- Relative density : No data available
- Density : No data available
- Relative gas density : No data available
- Solubility : Dispersible in water
- Partition coefficient n-octanol/water (Log Pow) : both insoluble
- Explosive limits : No data available
- Viscosity : 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	: Stable under normal conditions of use.
Possibility of hazardous reactions	: Be careful of contact with oxidants.
Conditions to avoid	: Ignition, sparks, open flame.
Incompatible materials	: Oxidizing agents.
Hazardous decomposition products	: No information available.

11. Toxicological information

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified.
Acute toxicity (inhalation)	: Not classified.

Pullulan (9057-02-7)	
Acute toxicity (oral)	Mouse LD50 >14.28 g/kg (Other companies SDS)
Methanol (67-56-1)	
Acute toxicity (oral)	Rat LD50 6.2 - 13g/kg (ACGIH) , 6200 mg/kg, 9100mg/kg (SIDS) , Human LD 0.3 - 1g/kg (SIDS) , Human LD50 1400mg/kg (DFGMAK)
Acute toxicity (dermal)	Rabbit LD50 15800mg/kg (DFGMAK) , monkey LD 1600 - 4000mg/kg (SIDS)
Acute toxicity (vapour)	Rat LC50 (8hr) >22500ppm (DFGMAK) , monkey LC (1-4hr) ≥52mg/L, LC (18hr) ≥13mg/L (SIDS)

Skin corrosion/irritation	: Not classified.
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Methanol (67-56-1)	
Skin corrosion/irritation	Rabbit, Skin irritation test (20 hours): No irritation (DFGMAK) Rabbit, Skin irritation test (24 hours): Moderate irritation (effects on delipidation) (DFGMAK)

Serious eye damage/irritation	: Not classified.
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Methanol (67-56-1)	
Serious eye damage/eye irritation	Rabbit, Eye irritation test (Draize test): Conjunctivitis, conjunctival edema (unknown whether these reactions recovered within 7 days) (EHC) Rabbit, Eye irritation test: Moderate irritation (EHC)

Respiratory sensitization	: classification not possible
Skin sensitization	: Not classified.

Methanol (67-56-1)	
Skin sensitization	Guinea pig, Skin sensitization test: Negative (EHC) Human patch test: Positive (It cannot be concluded that methanol caused sensitization) (DFGMAK)

Germ cell mutagenicity	: Not classified.
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Pullulan (9057-02-7)	
Germ cell mutagenicity	S. typhimurium, Ames test: Negative (CCRIS) Bacillus subtilis, DNA damage repair assay: Positive (RTECS)
Methanol (67-56-1)	
Germ cell mutagenicity	Mouse, Chromosomal aberration test /Sister chromatid exchange assay /Micronucleus test (inhalation exposure): Negative (DFGMAK) Mouse, Micronucleus test (intraperitoneal administration): Negative (DFGMAK) S. typhimurium/E. coli, Ames test: Negative (DFGMAK)

Carcinogenicity	: Not classified.
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Pullulan (9057-02-7)	
Carcinogenicity	Rat 62 weeks Dietary administration test No toxicity NOAEL: (Male) >4450 mg/kg/day, (Female) >5080 mg/kg/day (CCRIS)

Methanol (67-56-1)	
Carcinogenicity	Rat, Drinking-water administration test, 500 - 20000ppmv/v: Cancer in head and neck Blood Lymphatic system tumors (ACGIH) Rat /Mouse/monkey 18 or 24-month Inhalation exposure test, up to 1000ppm: No incidence of carcinoma (ACGIH)

Reproductive toxicity : May damage fertility or the unborn child.

Methanol (67-56-1)	
Reproductive toxicity	Pregnant mouse during organogenesis, Inhalation toxicity test: ≥ 6500 mg/m ³ ; Fetal resorption and exencephaly in offspring, fetal malformations (nerve and eye abnormalities, cleft palate, hydronephrosis, extremity abnormalities) (EHC) Rat on days 7 to 15 of gestation, Inhalation toxicity test: 26000 mg/m ³ ; Fetal malformations (excessive or rudimentary cervical ribs, urinary or cardiovascular abnormalities), NOAEL=6500 mg/m ³ (EHC)

STOT-single exposure : Not classified.

Methanol (67-56-1)	
Specific target organ toxicity (single exposure)	Human: Acute poisoning symptoms, suppression of the central nervous system, metabolic acidosis, visual disorder, visual loss, headache, vomiting, tachypnea, coma, etc., and occasionally, death (EHC) Central nervous system disorder, necrosis of the cerebral white matter (EHC) Mouse/Rat, Inhalation toxicity test: Anesthetic effects (EHC)

STOT-repeated exposure : Not classified.

Pullulan (9057-02-7)	
Specific target organ toxicity (repeated exposure)	Rat, 90-day oral toxicity test: No toxic effects (other companies SDS) Rat, 14-month oral toxicity test: No toxic effects (other companies SDS)

Methanol (67-56-1)	
Specific target organ toxicity (repeated exposure)	Human, Prolonged exposure, Low concentration: Widespread eye disorder (EHC) Chronic toxic effects due to occupational exposure: Visual loss (ACGIH) Chronic poisoned patients (vapour exposure): Conjunctivitis, headache, dizziness, insomnia, gastric disorder, bilateral visual loss (ACGIH) Rat, Oral toxicity test: Hepatocellular hypertrophy, etc. (PATTY)

Aspiration hazard : classification not possible

12. Ecological information

Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified.

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

Methanol (67-56-1)	
Ecotoxicity	Fish (Bluegill) LC50 (96hr) 15400mg/L (SIDS) Fish (Fathead minnow) LC50 (96hr) 28200mg/L (SIDS) Crustacea (Brine shrimp) EC50 (96hr) 1340mg/L (EHC) Crustacea (Brine shrimp) EC50 (24hr) 900.73mg/L (EHC)

Persistence and degradability

Pullulan (9057-02-7)	
Persistence and degradability	Readily biodegradable (Other companies SDS)
Methanol (67-56-1)	
Persistence and degradability	Biodegradation test (2 weeks): Readily biodegradable (Safety Assessment Data [METI])

Bioaccumulative potential

Methanol (67-56-1)	
Bioaccumulation	BCF=0.01 - 0.51, 0.2 (predicted value) (EHC)

Mobility in soil

Methanol (67-56-1)	
Mobility in soil	Koc=1 (predicted value) (SIDS)

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 P-800, P-400, P-200, P-100, P-50, P-20, P-10, P-5
kit components.

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.