

Material Safety Data Sheet

1. Identification

Product identifier used on the label

Pervipave RB Part A

Recommended use

For industrial and professional users only.
Resin bound aggregate based concrete resurfacing

Details of the supplier of the safety data sheet

Company

Jaisons Engineering Technologies
Gat. No. 322/C, Plot No. 2
Vishwachaya Industrial Area
Pirangut, Pune – 412115
India
Tel: +91 20 2544 9985
E-mail: factory@jaisonsgroup.com
Web: constructions.jaisonsgroup.com

Emergency telephone number

During normal Pacific Standard Time (PST)
+91 20 2544 9985
All other times, and in times of unavailability, contact your local emergency services.

2. Hazards Identification

Classification of the product

| | | |
|------------|---|--|
| Flam. Liq. | 3 | Flammable liquid and vapor. |
| Carc. | 2 | Suspected of causing cancer. |
| Repr. | 2 | Suspected of damaging fertility or the unborn child. |
| STOT RE | 2 | May cause damage to the hearing organs through prolonged or repeated exposure. |
| Skin Irrit | 2 | Causes skin irritation. |

Label elements

Pictogram:



Signal Word:
Warning

| Hazard Statement: | |
|--|--|
| H226 | Flammable liquid and vapor. |
| H315 | Causes skin irritation. |
| H332 | Harmful if inhaled. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation). |
| Precautionary Statements (Prevention): | |
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/ bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ ventilating/ lighting/ equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge |
| P260 | Do not breathe dust/gas/mist/vapours. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| Precautionary Statements (Response): | |
| P308 + P311 | IF exposed or concerned: Call a POISON CENTER or doctor/physician. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P314 | Get medical advice/attention if you feel unwell. |
| P303+P361+P353 | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower |

| | |
|--------------------------------------|---|
| | |
| P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| P362 + P364 | Take off contaminated clothing and wash before reuse. |
| P337 + P311 | If eye irritation persists: Call a POISON CENTER or doctor/physician. |
| | |
| Precautionary Statements (Storage): | |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| | |
| Precautionary Statements (Disposal): | |
| P501 | Dispose of contents/container to hazardous or special waste collection point. |

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Emergency overview

Avoid contact with the skin, eyes and clothing.
Wash thoroughly after handling.
Keep container tightly closed.

3. Composition / Information on Ingredients

Chemical characterization: Mixtures

Description: ACRYLIC RESIN SOLUTION

Dangerous components

| Chemical name | CAS Number | Content (W/W) |
|----------------------------|--------------|---------------|
| Xylene, mixture of isomers | 1330-20-7 | 30 - 40 % |
| Ethylbenzene | 100 - 41 - 4 | 5 - 10 % |

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical

attention.

If on skin:

After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:

water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

Formation of toxic gases is possible during heating or in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/aerosol/spray mists. Wear eye/face protection. If exposed to high vapour concentration, leave area immediately. Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents. Send for recovery or disposal in suitable receptacles.

7. Handling and Storage

Precautions for safe handling

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gas tight. Protect against moisture. If bulging of drum occurs, transfer to well ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

Conditions for safe storage, including any incompatibilities

No applicable information available.

Suitable materials for containers: tinned carbon steel (Tinplate)

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight.

Storage temperature: 16 - 27 °C

8. Personal Protection

Personal protective equipment

General protective and hygiene measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
Do not eat or drink while working.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device.
In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Hand protection:

Chemical resistant protective gloves should be worn to prevent all skin contact., Suitable materials may include, chloroprene rubber (Neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, fluoroelastomer (Viton), depending upon conditions of use.

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Cover as much of the exposed skin as possible to prevent all skin contact., Suitable materials may include, saran-coated material, depending upon conditions of use.

General safety and hygiene measures:

Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Avoid exposure - obtain special instructions before use. Handle in accordance with good building materials, hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

| | |
|--------------------|--------------------------------------|
| Form: | Fluid |
| Odour: | No applicable information available |
| Odour threshold: | No applicable information available |
| Colour: | Transparent |
| pH value: | The product has not been tested. |
| Melting point: | No applicable information available. |
| Boiling point: | 136 °C |
| Sublimation point: | No applicable information available. |
| Flash point: | 27 °C |
| Flammability: | Not highly flammable |

| | |
|---|---|
| Lower explosion limit: | No applicable information available. |
| Upper explosion limit: | No applicable information available. |
| Vapour pressure: | 5 mm Hg at 20°C |
| Density: | 1.02 g/cm ³ (20 °C) |
| Relative density: | 1.02 |
| Vapour density: | Heavier than air. |
| Partitioning coefficient n-octanol/water (log Pow): | No data available. |
| Thermal decomposition: | No decomposition if stored and handled as prescribed/indicated. |
| Viscosity, dynamic: | No applicable information available. |
| Viscosity, kinematic: | No applicable information available. |
| Solubility (quantitative): | No applicable information available. |
| Solubility (qualitative): | No applicable information available. |
| Evaporation rate: | No applicable information available. |
| Other Information: | If necessary, information on other physical and chemical parameters is indicated in this section. |

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is stable if stored and handled as prescribed/indicated.

Conditions to avoid

See MSDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents, strong reducing agents
Hazardous decomposition products

Decomposition products:

irritant gases/vapours, carbon oxides

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after short-term inhalation. Inhalation of vapours may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed.

Oral

No applicable information available.

Inhalation

Type of value: ATE

Value: 1.92 mg/l

Determined for mist

Dermal

No applicable information available.

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Sensitization

No sensitizing effects known.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:
No further relevant information available

Persistence and degradability

Assessment biodegradation and elimination (H₂O)
Inherently biodegradable. The insoluble fraction can be removed by mechanical means in suitable waste water treatment plants.
The polymer component of the product is poorly biodegradable.

Bioaccumulative potential

Based on a weight of evidence, the compound will not bioaccumulate.

Mobility in soil

The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control. The product has not been tested.
The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Residues should be disposed of in the same manner as the substance/product. Do not discharge into drains/surface waters/groundwater.

Container disposal:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

NFPA Hazard codes:

Health : 3

Fire: 1

Reactivity: 0

Special:

16. Other Information

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. The details of this data sheet must be passed on to all personnel handling the product. Please consult the Technical Data Sheet prior to any use and processing.

Material Safety Data Sheet

1. Identification

Product identifier used on the label

Pervipave RB Part B

Recommended use

For industrial and professional users only.
Resin bound aggregate based concrete resurfacing

Details of the supplier of the safety data sheet

Company

Jaisons Engineering Technologies
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Web: constructions.jaisonsgroup.com

Emergency telephone number

During normal Pacific Standard Time (PST)
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All other times, and in times of unavailability, contact your local emergency services.

2. Hazards Identification

Classification of the product

| | | |
|---------------------------------|--------------------------------------|--|
| Acute Tox.4 (Inhalation - mist) | 4 (Inhalation - mist) | Acute toxicity |
| Skin Corr./Irrit. | 2 | Skin corrosion/irritation |
| Eye Dam./Irrit. | 2B | Serious eye damage/eye irritation |
| Resp. Sens. | 1 | Respiratory sensitization |
| Skin Sens. | 1 | Skin sensitization |
| Carc. | 2 | Carcinogenicity |
| STOT SE | 3 (irritating to respiratory system) | Specific target organ toxicity — single exposure |
| STOT RE | 2 (by inhalation) | Specific target organ toxicity — repeated exposure |

Label elements

Pictogram:



Signal Word:

Danger

| Hazard Statement: | |
|--|--|
| H320 | Causes eye irritation. |
| H315 | Causes skin irritation. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H317 | May cause an allergic skin reaction. |
| H335 | May cause respiratory irritation. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation). |
| Precautionary Statements (Prevention): | |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P260 | Do not breathe dust/gas/mist/vapours. |
| P201 | Obtain special instructions before use. |
| P261 | Avoid breathing mist. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P284 | [In case of inadequate ventilation] wear respiratory protection. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P264 | Wash with plenty of water and soap thoroughly after handling. |
| Precautionary Statements (Response): | |
| P308 + P311 | IF exposed or concerned: Call a POISON CENTER or doctor/physician. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

| | |
|--------------------------------------|---|
| P314 | Get medical advice/attention if you feel unwell. |
| P303 + P352 | IF ON SKIN (or hair): Wash with plenty of soap and water. |
| P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| P362 + P364 | Take off contaminated clothing and wash before reuse. |
| P337 + P311 | If eye irritation persists: Call a POISON CENTER or doctor/physician. |
| Precautionary Statements (Storage): | |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| Precautionary Statements (Disposal): | |
| P501 | Dispose of contents/container to hazardous or special waste collection point. |

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Emergency overview

WARNING:

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

Avoid contact with the skin, eyes and clothing.

Wash thoroughly after handling.

Keep container tightly closed.

3. Composition / Information on Ingredients

| Chemical name | CAS Number | Content (W/W) |
|-----------------------|------------|---------------|
| Isocyanate Prepolymer | | 70 - 80 % |
| Ethyl Acetate | 141-78-6 | 20 – 30 % |

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. Immediately remove contaminated clothing.

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:

After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

Hazards: Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:

water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

nitrous gases, fumes/smoke, isocyanate, vapour

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/aerosol/spray mists. Wear eye/face protection. If exposed to high vapour concentration, leave area immediately. Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Do not make container pressure tight. Move container to a well-ventilated area (outside). Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 8 % concentrated ammonia, 2 % detergent. Add at a 10 to 1 ratio. Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide.

For large amounts: If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal.

For residues: The following measures should be taken for final cleanup: Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes.

Dike spillage.

7. Handling and Storage

Precautions for safe handling

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. If bulging of drum occurs, transfer to well ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

Conditions for safe storage, including any incompatibilities

No applicable information available.

Suitable materials for containers: tinned carbon steel (Tinplate)

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight.

Storage stability:

Storage temperature: 16 - 27 °C

8. Personal Protection

Personal protective equipment

Respiratory protection:

When workers are facing concentrations above the occupational exposure limits they must use appropriate certified respirators. When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) NIOSH-certified air-purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place. For emergency or non-routine, high exposure situations, including confined space entry, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves should be worn to prevent all skin contact., Suitable materials may include, chloroprene rubber (Neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, fluoroelastomer (Viton), depending upon conditions of use.

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Cover as much of the exposed skin as possible to prevent all skin contact., Suitable materials may include, saran-coated material, depending upon conditions of use.

General safety and hygiene measures:

Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Avoid exposure - obtain special instructions before use. Handle in accordance with good building materials, hygiene and safety practice. Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks).

9. Physical and Chemical Properties

| | |
|---|---|
| Form: | liquid |
| Odour: | No applicable information available |
| Odour threshold: | No applicable information available |
| Colour: | Transparent |
| pH value: | The product has not been tested. |
| Melting point: | No applicable information available. |
| Boiling point: | 77 °C |
| Sublimation point: | No applicable information available. |
| Flash point: | 4 °C |
| Flammability: | Not highly flammable |
| Lower explosion limit: | No applicable information available. |
| Upper explosion limit: | No applicable information available. |
| Vapour pressure: | 0.00001 mm Hg at 20°C |
| Density: | 1.08 g/cm ³ (20 °C) |
| Relative density: | 1.08 |
| Vapour density: | Heavier than air. |
| Partitioning coefficient n-octanol/water (log Pow): | No data available. |
| Thermal decomposition: | No decomposition if stored and handled as prescribed/indicated. |
| Viscosity, dynamic: | No applicable information available. |
| Viscosity, kinematic: | No applicable information available. |
| Solubility (quantitative): | No applicable information available. |
| Solubility (qualitative): | No applicable information available. |
| Evaporation rate: | No applicable information available. |
| Other Information: | If necessary, information on other physical and chemical parameters is indicated in this section. |

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is stable if stored and handled as prescribed/indicated.

Conditions to avoid

See MSDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents, strong reducing agents
Hazardous decomposition products

Decomposition products:

irritant gases/vapours, carbon oxides

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after short-term inhalation. Inhalation of vapours may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed.

Oral

No applicable information available.

Inhalation

Type of value: ATE

Value: 1.92 mg/l

Determined for mist

Dermal

No applicable information available.

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Sensitization

Assessment of sensitization: Sensitization after skin contact possible. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapour-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The substance may cause damage to the olfactory epithelium after repeated inhalation. The substance may cause damage to the lung after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.

Genetic toxicity

Assessment of mutagenicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Carcinogenicity

Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.

Information on: Diphenylmethane-4,4'-diisocyanate (MDI)

Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.

Reproductive toxicity

Assessment of reproduction toxicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Teratogenicity

Assessment of teratogenicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Other Information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Medical conditions aggravated by overexposure:

The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Preemployment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Inherently biodegradable. The insoluble fraction can be removed by mechanical means in suitable

waste water treatment plants.

The polymer component of the product is poorly biodegradable.

Bioaccumulative potential

Based on a weight of evidence, the compound will not bioaccumulate.

Mobility in soil

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control. The product has not been tested.

The statements on ecotoxicology have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Residues should be disposed of in the same manner as the substance/product. Do not discharge into drains/surface waters/groundwater.

Container disposal:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

NFPA Hazard codes:

Health : 3

Fire: 1

Reactivity: 0

Special:

16. Other Information

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. The details of this data sheet must be passed on to all personnel handling the