



# Material Safety Data Sheet

DOW CHEMICAL INTERNATIONAL PVT. LTD.

**Product name: VORAMER™ RR 1008 Isocyanate**

**Issue Date: 31.08.2021**

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DOW CHEMICAL INTERNATIONAL PVT. LTD. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name: VORAMER™ RR 1008 Isocyanate**

### **Recommended use of the chemical and restrictions on use**

**Identified uses:** For industrial use. Component(s) for the manufacture of urethane polymers. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

### **COMPANY IDENTIFICATION**

DOW CHEMICAL INTERNATIONAL PVT. LTD.  
UNIT NO. 801, 8th FLOOR, BUILDING NO. 9,  
GIGAPLEX,  
TTC INDUSTRIAL AREA, MIDC, AIROLI  
NAVI, MUMBAI  
400708 NAVI, MUMBAI  
INDIA

**Customer Information Number:**

(91) 22-6674-1500  
SDSQuestion@dow.com

### **EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 91-22-6674-1800

**Local Emergency Contact:** 0091-22-6674-1800

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## 2. HAZARDS IDENTIFICATION

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### **GHS Classification**

Skin corrosion/irritation - Category 2

Serious eye damage/eye irritation - Category 2B

Respiratory sensitisation - Category 1

Skin sensitisation - Category 1

Specific target organ toxicity - single exposure - Category 3

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

### **GHS label elements**

**Hazard pictograms**



Signal word: **DANGER!**

#### **Hazard statements**

Causes skin and eye irritation.

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation.

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

#### **Precautionary statements**

##### **Prevention**

Do not breathe mist or vapours.

Wash skin thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

In case of inadequate ventilation wear respiratory protection.

##### **Response**

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin irritation or rash occurs: Get medical help.

If eye irritation persists: Get medical help.

If experiencing respiratory symptoms: Get emergency medical help immediately.

##### **Storage**

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

##### **Disposal**

Dispose of contents and/or container to an approved waste disposal plant.

#### **Other hazards**

No data available

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a substance.

**Component**

**CASRN**

**Concentration**

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Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 50.0 - < 70.0 %
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 20.0 - < 40.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	>= 5.0 - < 20.0 %
Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene	5873-54-1	>= 3.0 - < 7.0 %

*Note*

Note: CAS 101-68-8 is an MDI isomer that is part of CAS 9016-87-9.

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## 4. FIRST AID MEASURES

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### Description of first aid measures

#### General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Most important symptoms and effects, both acute and delayed:**

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

#### **Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

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## **5. FIREFIGHTING MEASURES**

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### **Extinguishing media**

**Suitable extinguishing media:** Water fog or fine spray.. Dry chemical fire extinguishers.. Carbon dioxide fire extinguishers.. Foam.. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective..

**Unsuitable extinguishing media:** Do not use direct water stream.. May spread fire..

### **Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.. Combustion products may include and are not limited to:. Nitrogen oxides.. Isocyanates.. Hydrogen cyanide.. Carbon monoxide.. Carbon dioxide..

**Unusual Fire and Explosion Hazards:** Product reacts with water. Reaction may produce heat and/or gases.. This reaction may be violent.. Container may rupture from gas generation in a fire situation.. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.. Dense smoke is produced when product burns..

### **Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry.. Stay upwind. Keep out of low areas where gases (fumes) can accumulate.. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available.. Do not use direct water stream. May spread fire.. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles.. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container.. Move container from fire area if this is possible without hazard.. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS..

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).. Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.. For protective equipment in post-fire or non-fire clean-up situations, see Section 8 of the safety data sheet..

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. If available, use foam to smother or suppress. Refer to section 7, Handling, for additional precautionary measures. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Absorb with materials such as: Vermiculite. Dirt. Sand. Clay. Do NOT use absorbent materials such as: Cement powder (Note: may generate heat). Collect in suitable and properly labeled open containers. Do not place in sealed containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs. Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution: Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure. Contact your supplier for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling. Keep container tightly closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**Conditions for safe storage:** Store in a dry place. Protect from atmospheric moisture. Do not store product contaminated with water to prevent potential hazardous reaction. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

### Storage stability

<b>Storage temperature:</b>	<b>Storage Period:</b>
15 - 25 °C	6 Month

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
4,4'-Methylenediphenyl diisocyanate	ACGIH	TWA	0.005 ppm
	Dow IHG	TWA	0.005 ppm
	Dow IHG	STEL	0.02 ppm

### Exposure controls

**Engineering controls:** Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Avoid gloves made of: Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical state

Liquid.

<b>Color</b>	Brown
<b>Odor</b>	Characteristic
<b>Odor Threshold</b>	0.4 ppm <i>Based on Literature for MDI.</i> Odor is inadequate warning of excessive exposure.
<b>pH</b>	Not applicable
<b>Melting point/range</b>	No test data available
<b>Freezing point</b>	No test data available
<b>Boiling point (760 mmHg)</b>	No test data available
<b>Flash point</b>	<b>closed cup</b> >100 °C <i>Estimated.</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Flammability (liquids)</b>	Not expected to be a static-accumulating flammable liquid.
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapor Pressure</b>	No test data available
<b>Relative Vapor Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.08 - 1.12 at 25 °C / 25 °C <i>ASTM D891</i>
<b>Water solubility</b>	insoluble
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No test data available
<b>Decomposition temperature</b>	No test data available
<b>Kinematic Viscosity</b>	150 - 275 mm <sup>2</sup> /s at 25 °C <i>ASTM D 445</i>
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No
<b>Molecular weight</b>	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.

**Possibility of hazardous reactions:** Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases. Water.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up

can be rapid. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

**Incompatible materials:** Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia. Bases. Metal compounds. Moist air. Strong oxidizers. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat. Avoid contact with metals such as: Aluminum. Zinc. Brass. Tin. Copper. Galvanized metals. Avoid contact with absorbent materials such as: Moist organic absorbents. Avoid unintended contact with polyols. The reaction of polyols and isocyanates generate heat.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials.. Gases are released during decomposition..

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Information on likely routes of exposure

Ingestion, Inhalation, Skin contact, Eye contact.

**Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)**

#### Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):

LD50, > 2,000 mg/kg Estimated.

#### Information for components:

##### Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Typical for this family of materials. Observations in animals include: Gastrointestinal irritation. LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

##### Diphenylmethane Diisocyanate, isomers and homologues

Typical for this family of materials. LD50, Rat, > 10,000 mg/kg

##### 4,4'-Methylenediphenyl diisocyanate

LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

##### Isocyanato-2-[4-isocyanatophenyl)methyl]benzene

For similar material(s): LD50, Rat, > 2,000 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):  
LD50, > 2,000 mg/kg Estimated.

#### Information for components:

##### **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Typical for this family of materials. LD50, Rabbit, > 9,400 mg/kg

##### **Diphenylmethane Diisocyanate, isomers and homologues**

Typical for this family of materials. LD50, Rabbit, > 9,400 mg/kg

##### **4,4'-Methylenediphenyl diisocyanate**

LD50, Rabbit, > 9,400 mg/kg

##### **Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

For similar material(s): LD50, Rabbit, > 9,400 mg/kg

#### Acute inhalation toxicity

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

As product: The LC50 has not been determined.

#### Information for components:

##### **Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

The LC50 has not been determined.

##### **Diphenylmethane Diisocyanate, isomers and homologues**

LC50, Rat, 4 Hour, dust/mist, 0.49 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8). LC50, Rat, 1 Hour, Aerosol, 2.24 mg/l

For similar material(s): 2,4'-Diphenylmethane diisocyanate (CAS 5873-54-1). LC50, Rat, 4 Hour, Aerosol, 0.387 mg/l

**4,4'-Methylenediphenyl diisocyanate**

LC50, Rat, 1 Hour, dust/mist, 2.24 mg/l

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

LC50, Rat, 4 Hour, dust/mist, 0.387 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8). LC50, Rat, 1 Hour, Aerosol, 2.24 mg/l

**Skin corrosion/irritation**

Based on information for component(s):

Prolonged contact may cause skin irritation with local redness.

Material may stick to skin causing irritation upon removal.

May stain skin.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Prolonged contact may cause skin irritation with local redness.

Material may stick to skin causing irritation upon removal.

May stain skin.

**Diphenylmethane Diisocyanate, isomers and homologues**

Prolonged contact may cause slight skin irritation with local redness.

May stain skin.

**4,4'-Methylenediphenyl diisocyanate**

Prolonged contact may cause moderate skin irritation with local redness.

Repeated contact may cause moderate skin irritation with local redness.

May stain skin.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

Prolonged contact may cause moderate skin irritation with local redness.

Repeated contact may cause moderate skin irritation with local redness.

May stain skin.

**Serious eye damage/eye irritation**

Based on information for component(s):

May cause eye irritation.

May cause slight temporary corneal injury.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

May cause eye irritation.

May cause slight temporary corneal injury.

**Diphenylmethane Diisocyanate, isomers and homologues**

May cause moderate eye irritation.

May cause slight temporary corneal injury.

**4,4'-Methylenediphenyl diisocyanate**

May cause moderate eye irritation.

May cause slight temporary corneal injury.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

May cause moderate eye irritation.

May cause slight temporary corneal injury.

**Sensitization**

For skin sensitization:

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

For respiratory sensitization:

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

For skin sensitization:

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

For respiratory sensitization:

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Diphenylmethane Diisocyanate, isomers and homologues**

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**4,4'-Methylenediphenyl diisocyanate**

For skin sensitization:

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

For respiratory sensitization:

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

For skin sensitization:

For similar material(s):

Skin contact may cause an allergic skin reaction.

Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

For respiratory sensitization:

May cause allergic respiratory reaction.

MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized.

Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Diphenylmethane Diisocyanate, isomers and homologues**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**4,4'-Methylenediphenyl diisocyanate**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Based on physical properties, not likely to be an aspiration hazard.

**Diphenylmethane Diisocyanate, isomers and homologues**

Based on physical properties, not likely to be an aspiration hazard.

**4,4'-Methylenediphenyl diisocyanate**

Based on physical properties, not likely to be an aspiration hazard.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

Based on physical properties, not likely to be an aspiration hazard.

**Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)**

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Information for components:****Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Diphenylmethane Diisocyanate, isomers and homologues**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**4,4'-Methylenediphenyl diisocyanate**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

**Carcinogenicity**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Information for components:****Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Diphenylmethane Diisocyanate, isomers and homologues**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**4,4'-Methylenediphenyl diisocyanate**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with

respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

**Teratogenicity**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**Diphenylmethane Diisocyanate, isomers and homologues**

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

**4,4'-Methylenediphenyl diisocyanate**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

For similar material(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

No relevant data found.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

No specific, relevant data available for assessment.

**Diphenylmethane Diisocyanate, isomers and homologues**

No relevant data found.

**4,4'-Methylenediphenyl diisocyanate**

No relevant data found.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

No relevant data found.

**Mutagenicity**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Information for components:**

**Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Diphenylmethane Diisocyanate, isomers and homologues**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**4,4'-Methylenediphenyl diisocyanate**

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

**Isocyanato-2-[(4-isocyanatophenyl)methyl]benzene**

For similar material(s): Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information appears in this section when such data is available.*

**Ecotoxicity****Acute toxicity to fish**

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species.

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

Based on information for a similar material:

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to bacteria**

Based on information for a similar material:

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

**Toxicity to soil-dwelling organisms**

EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

**Toxicity to terrestrial plants**

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

**Persistence and degradability**

**Biodegradability:** In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

10-day Window: Not applicable

**Biodegradation:** 0 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 302C or Equivalent

**Bioaccumulative potential**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Bioconcentration factor (BCF):** 92 Cyprinus carpio (Carp) 28 d

**Mobility in Soil**

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

**Results of PBT and vPvB assessment**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

**Other adverse effects**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

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**14. TRANSPORT INFORMATION**

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**Classification for ROAD and Rail transport:**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport  
 Consult IMO regulations before transporting ocean bulk

**Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code**

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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This product has been classified in accordance with the criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), rev. 8.

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## 16. OTHER INFORMATION

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**Other information**

Protective gloves should be worn when handling freshly-made polyurethane products to avoid skin contact with trace amounts of residual materials, some of which may be hazardous in contact with skin.

**Revision**

Identification Number: 150328 / A146 / Issue Date: 31.08.2021 / Version: 6.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
STEL	Short term exposure limit
TWA	Time weighted average

**Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen,

Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

DOW CHEMICAL INTERNATIONAL PVT. LTD. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

IN



Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

## SUNFLEX EPDM RUBBER GRANULES

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### \* SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name/designation SUNFLEX EPDM RUBBER GRANULES

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

##### Sector of uses [SU]

SU12 Manufacture of plastics products, including compounding and conversion

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

SU3 Industrial uses

##### Product Categories [PC]

Rubberizing agent

##### Use of the substance/mixture

According to restriction entry no. 78, Annex XVII, REACH Regulation, the product must be embedded in a matrix (with the aid of a suitable binder)

#### 1.3 Details of the supplier of the safety data sheet

##### Supplier

SUNFLEX RECYCLING PVT LTD  
PLOT NO. 274/4, SHITAL ESTATE,  
B/H SATYAMEV COMPLEX,  
OPP. GUJARAT HIGH COURT,  
S.G. HIGHWAY, SOLA,  
AHMEDABAD - 380060, GUJARAT, INDIA  
Phone: +919925032675, +919925032151

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Remark

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

#### 2.2 Label elements

No data available

#### 2.3 Other hazards

##### Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

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### SECTION 3: Composition / information on ingredients

#### 3.1 Substances

not applicable

### 3.2 Mixtures

#### Additional information

Product contains no hazardous ingredients.

#### Remark

The product doesn't contain as injurious to health classified material in concentrations, which would be to be considered in accordance with the reg. (EU) 1272/2008.

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

#### Following inhalation

In the event of symptoms refer for medical treatment.  
No special measures are necessary.

#### Following skin contact

Wash immediately with:  
Water  
No special measures are necessary.  
In case of skin irritation, consult a physician.

#### After eye contact

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

#### Following ingestion

If swallowed seek medical advice immediately and show the doctor the material safety data sheet.

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

No data available

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

alcohol resistant foam  
Extinguishing powder  
Carbon dioxide (CO<sub>2</sub>)  
Water spray jet

#### Unsuitable extinguishing media

Full water jet

### 5.2 Special hazards arising from the substance or mixture

#### Hazardous combustion products

In case of fire formation of dangerous gases possible.  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)

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### 5.3 Advice for firefighters

#### Special protective equipment for firefighters

In case of fire: Wear self-contained breathing apparatus.

### Additional information

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Avoid dust formation.

### 6.2 Environmental precautions

No special measure necessary.

Do not allow to enter into surface water or drains.

### 6.3 Methods and material for containment and cleaning up

#### For containment

After taking up the material dispose according to regulation.

Take up mechanically and send for disposal.

### 6.4 Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Protective measures

Avoid the formation and deposition of dust.

No special measure necessary.

The product is:

Combustible

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Keep in a cool, well-ventilated place.

No special measures necessary if used correctly.

#### Advices on general occupational hygiene

When using do not eat, drink, smoke, sniff.

Wash hands before breaks and after work.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

No special measures required.

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**Materials to avoid**

Do not store together with:  
Oxidising agent

**7.3 Specific end use(s)**

No data available

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**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

No data available

**8.2 Exposure controls**

**Appropriate engineering controls**

**Technical measures to prevent exposure**

Avoid the formation and deposition of dust.  
Provide suitable extraction at the processing machines.

**Personal protection equipment**

**Eye/face protection**

No special measures necessary if used correctly.  
in cause of spraying wear safety goggles

**Hand protection**

No special measures necessary if used correctly.

**Body protection:**

Light protective clothing.

**Respiratory protection**

Suitable respiratory protection apparatus:  
Short term: filter apparatus, Filter P1  
In case of dust formation wear micro dust mask.

**Additional information**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**Physical state**

Granulate

**Odour**

odourless

**Safety relevant basis data**

	Value	Method	Source, Remark
Odour threshold:	not determined		
Melting point/freezing point	not determined		

**SUNFLEX EPDM RUBBER GRANULES**

	Value	Method	Source, Remark
Boiling point or initial boiling point and boiling range	not determined		
flammability	not determined		
Lower and upper explosion limit	not determined		
Flash point	not determined		
Auto-ignition temperature	not determined		
Decomposition temperature	not determined		
pH	not determined		
Viscosity	not determined		
Solubility(ies)	Water solubility		No data available practically insoluble
Partition coefficient n-octanol/water (log value)	not determined		
Vapour pressure	not determined		
Density and/or relative density	not determined		
Relative vapour density	not determined		
particle characteristics	not determined		

**9.2 Other information**

**Other safety characteristics**

	Value	Method	Source, Remark
Explosive properties			The product is not explosiv.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

No hazardous reactions known.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No hazardous reactions known.

**10.5 Incompatible materials**

No data available

**10.6 Hazardous decomposition products**

If heated dangerous gases/vapours may arise.

**\* SECTION 11: Toxicological information**

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Acute toxicity**

**Animal data**

	Effective dose	Method, Evaluation	Source, Remark
Acute oral toxicity			No data available.
Acute dermal toxicity			No data available.
Acute inhalation toxicity			No data available.

**Skin corrosion/irritation**

**Animal data**

Result / Evaluation	Method	Source, Remark
non-irritant.		

**Serious eye damage/irritation**

**Animal data**

Result / Evaluation	Method	Source, Remark
non-irritant.		

**Sensitisation to the respiratory tract**

not determined

**Skin sensitisation**

**Animal data**

Result / Evaluation	Dose / Concentration	Method	Source, Remark
not sensitising.			

**Germ cell mutagenicity**

Value	Method	Result / Evaluation	Remark
In vitro mutagenicity/genotoxicity			No data available

**Carcinogenicity**

**Animal data**

Value	Method	Result / Evaluation	Remark
Carcinogenicity			No data available

**Reproductive toxicity**

**Animal data**

Value	Method	Result / Evaluation	Remark
Reproductive toxicity			No data available

**STOT-single exposure**

not determined

**STOT-repeated exposure**

not determined

**Aspiration hazard**

not determined

**11.2 Information on other hazards**

**Information on other hazards**

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties		No data available	
In vitro phototoxicity		No data available	

**Other information**

In the case of appropriate handling and intended use no healthwise unfavorable effects of the product are well-known.  
Toxicological data are not available.

**\* SECTION 12: Ecological information**

**12.1 Toxicity**

**Aquatic toxicity**

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity			
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea			
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria			
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms			

**12.2 Persistence and degradability**

	Value	Method	Source, Remark
Biodegradation			No data available

**12.3 Bioaccumulative potential**

**Assessment/classification**

No data available

**12.4 Mobility in soil**

**Assessment/classification**

No data available

**12.5 Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

\* **12.6 Endocrine disrupting properties**

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties		No data available	

**12.7 Other adverse effects**

**Additional ecotoxicological information**

**Additional information**

If appropriate application no interferences in sewage treatment plants.  
Ecological dates are not available.  
Do not allow uncontrolled discharge of product into the environment.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Appropriate disposal / Package**

Completely emptied packages can be recycled.

**Remark**

For recycling, contact manufacturer.  
Material recycling possible.  
The Waste code is that of the process of origin and is therefore not indicated.  
The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors.

\* **SECTION 14: Transport information**

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1 UN number or ID number</b>	-	-	-
<b>14.2 UN proper shipping name</b>	-	-	-
<b>14.3 Transport hazard class(es)</b>	-	-	-
<b>14.4 Packing group</b>	-	-	-
<b>14.5 Environmental hazards</b>	-	-	-

**14.6 Special precautions for user**

No data available

**14.7 Maritime transport in bulk according to IMO instruments**

No data available

\* **All transport carriers**

No dangerous goods as defined by the transport regulations - ADR/RID, IMDG, ICAO/IATA-DGR.

\* **Land transport (ADR/RID)**

\* **Remark**

No dangerous goods as defined by these transport regulations.



Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

## SUNFLEX EPDM RUBBER GRANULES

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\* **Sea transport (IMDG)**

- \* **Remark**  
No hazardous material as defined by the prescriptions.

\* **Air transport (ICAO-TI / IATA-DGR)**

- \* **Remark**  
No hazardous material as defined by the prescriptions.

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\* **SECTION 15: Regulatory information**

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

**Other regulations (EU)**

**Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC**

VOC content, ready-to-use condition 0 %

**15.2 Chemical Safety Assessment**

\* **National regulations**

For this substance a chemical safety assessment is not required.

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**SECTION 16: Other information**

**Additional information**

National and local regulations concerning chemicals shall be observed.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

**Indication of changes**

\* Data changed compared with the previous version

## MATERIAL SAFETY DATA SHEET INFORMATION

**PRODUCT NAME:** SBR (Styrene Butadiene Rubber)1- 4 mm, 1-3mm, 0.8 -2mm, 30 mesh, 40 mesh, 20mm shredded rubber chips (TDF chips).

**OTHER NAMES:** Colored recycled rubber granules, Crumb rubber.

**USES:** Recycled rubber safety floor surfacing, Poured rubber surfacing.

UN No:	N/R
Dangerous Goods Class:	N/R
Packing Group:	N/R
Hazchem Code:	N/R
Poisons Schedule:	None
Subsidiary Risk:	None

<b>Hazardous Nature:</b>	SBR is not classified hazardous.	
<b>Physical Description &amp; Properties</b>		
<b>Appearance:</b>	Colored, Solid Recycled Rubber Granules, Rubber Powder.	
<b>Melting Point:</b>	N/A	
<b>Boiling Point:</b>	N/A	
<b>Vapour Pressure:</b> (Kpa @ 20 degrees Celsius)	N/A	
<b>Specific Gravity:</b> (20 degrees Celsius)	N/A	
<b>Flash Point:</b>	> 61	
<b>Flammability:</b>	N/A	
<b>Chemical Stability:</b>	Stable at room temperature	
<b>Reactivity:</b>	Solvents, Resin based solutions and extreme heat	
<b>Solubility:</b>	Insoluble	
<b>Product Ingredients:</b>		
<b>Ingredient</b>	<b>CAS Number</b>	<b>Proportion (w/v %)</b>
Recycled Rubber SBR	Various	<100
Carbon Black	Generic Types	40
Organic Materials	Generic Types	15
Colourants	Various	>10

<b>First Aid Measures</b>	
<b>Ingestion</b>	May Cause Vomiting and headache – Seek medical attention
<b>Eye Contact</b>	May Cause a mild irritation – Seek medical attention
<b>Skin Contact</b>	May cause Seek medical attention for skin irritations
<b>Inhaled</b>	Adverse health effects due in inhalation are unlikely due to the low vapour pressure of product. In confined areas inhalation may cause some irritability to respiratory system, if this occurs seek medical attention
<b>Medical Assistance</b>	Treat according to symptoms

## **Exposure Controls: PPE**

### **National Exposure Standards**

The time weighted average concentration (TWA) for this product is not applicable – highest allowable exposure concentration in an 8 hour day for a 5 day working week. The short term exposure limit (STEL) is not applicable – maximum allowable exposure concentration at any time. Replacing a TWA or STEL value for some products is a peak limitation value: none applies in this case. In addition to the exposure concentrations may be a subsidiary caution in such cases where the product is a skin sensitizer, where none applies in this case.

### **Biological Limit Values (BLV)**

None Established

### **Engineering Controls**

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces.

### **Personal Protective Equipment (PPE)**

**Respiratory Protection:** Where concentrations in air may approach or exceed the limits described in national exposure standards, it is recommended to use a half-face filter mask to protect from over exposure by inhalation.

**Eye Protection:** Use safety glasses or a face shield when handling product.

**Skin/ Body Protection:** Always wear long sleeved, long trousers and enclosed footwear or safety boots. It is recommended that chemical resistant gloves be worn when handling this product.

## **Fire Fighting Measures**

Trained personnel to attend a fire in progress, provide this document to fire fighters. Prevent extinguishing media from escaping into drains and waterways.

### **Suitable Extinguishing Media**

- Water Spray
- Carbon Dioxide
- Dry Powder
- Chemical Foam

### **Hazards from combustion products**

- Irritant Fumes
- Carbon Dioxide
- Carbon Monoxide

## **Precautions for fire fighters and special Protective equipment**

- Full protective clothing and self-contained breathing Apparatus

## **Accidental Release Measures**

### **Emergency Procedures**

Prevent product from escaping to drains and waterways and ensure drain valves are closed at all times. Utilise a containment drum to contain leaking packaging. Prevent fumes, vapours and/or dusts from building up in confined areas. Clean up and report spills immediately.

### **Methods and materials for containment**

#### **Land Spills**

- Eliminate sources of Ignition
- Warn occupants of downward areas of possible fire and explosion hazards
- Keep the public away from area
- Prevent product from entering sewers, water courses and low-lying areas
- Shut of the source of the spill if safe to do so
- Advise authorities if substance has entered water ways, sewers or has contaminated soil or vegetation
- Consult expert on disposal of recovered materials to ensure conformity to local disposal regulations

#### **Water Spills**

- Eliminate any sources of ignition
- Warn occupants of downward areas of possible fire and explosion hazards
- Notify the port or relevant authority and secure area from public
- Shut off and confine the source of the spill if it is safe to do so
- Remove the product from the surface by skimming or with absorbent material
- Consult expert on disposal of recovered materials to ensure conformity to local disposal regulations

## **Handling and Storage**

### **Precautions for safe handling**

Product will not burn unless deliberately lit. SBR will furl a fire if already in progress. Avoid contact with extreme heat and naked flames. Use appropriate PPE and industrial hygiene practices

### **Conditions for safe storage**

Store in a cool, dry place away from direct sunlight

## **Disposal Considerations**

### **Disposal Methods**

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain product residue that may be harmful. Ensure empty packaging is managed in accordance with dangerous goods regulations.

### **Special Precautions**

This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product should be treated and disposed through chemical waste treatment, or considered for use in recycling.

## **Transport Information**

Store and transport product in sealed bags. SBR is not classified as Dangerous Goods for Transport by road and rail.



# SAFE STORAGE HANDLING of Sunflex EPDM rubber granules

→ Datasheet concerning the safe storage handling of Sunflex EPDM rubber granules

## • Information about the product and company

Trade name	SUNFLEX EPDM RUBBER GRANULES SUNFLEX INFILL EPDM RUBBER GRANULES SUNFLEX RUBBER FLOORING SUNFLEX RECYCLING PRIVATE LIMITED EPDM RUBBER GRANULES
MANUFACTURER	SUNFLEX RECYCLING PVT LTD PLOT NO. 274/4, SHITAL ESTATE, B/H SATYAMEV COMPLEX, OPP. GUJARAT HIGH COURT, S.G. HIGHWAY, SOLA, AHMEDABAD - 380060, GUJARAT, INDIA
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## • Possible Hazards

SUNFLEX EPDM RUBBER GRANULES are not subject to specific labeling requirements according to the Chemicals Ordinance. No hazards are known to exist based on all previous knowledge.

## • Composition / components

Chemical characterization:

Vulcanized rubber mixture based on EPDM (ethylene propylene diene monomer (M-class) rubber), natural mineral fillers, paraffinic mineral oils, dyes, vulcanization and processing agents, antioxidants.

## • First aid measures

No special measures are required.

## • Fire-fighting measures

No limitation in the choice of extinguishing agents. The products are flammable. In case of fire, combustion gases and fumes can be generated. Do not stay in the hazardous area unless wearing a self-contained breathing apparatus.

## • Measures in case of unintentional release

No special personnel-related measures are required. Cleaning and material collection can be done mechanically.

## • Handling, occupational safety and storage

No special measures are required for handling the products. No special fire-protection and explosion-protection

measures are required. The material must not be exposed to sources of ignition.

During storage, the containers must be kept closed. Store opened containers in a dry area. The original containers are weatherproof.

No special measures are required as regards industrial hygiene, respiratory protection and hand protection.

For eye protection, safety glasses with side shields must be worn to protect from flying granules.

The required occupational safety measures are to be observed according to existing accident-prevention regulations.

- **Physical and chemical properties**

Density	Approximately 1.5 - 1.6 g/cm <sup>3</sup>
Form of product	Granules with defined granulation and grain size distribution
Color	Defined color for each granulate
Odour	Weak characteristic smell
Solubility	Insoluble in water

- **Stability and reactivity**

When used in accordance with instructions, there is no decomposition and there are no dangerous reactions.

- **Toxicological and ecological aspects**

According to current knowledge, no toxicological effects are known. The material is unfit for human consumption. No risks to the environment and the water system are known.

- **Disposal**

Non-used product remnants can be disposed of following local regulations and provisions.

- **Transport guidelines**

The products are not considered hazardous materials according to applicable transport guidelines.

- **Miscellaneous guidelines and information**

This information is based on the current state of knowledge and experience. The source of the information consists of the latest safety datasheets for the individual materials used. This datasheet describes the products as regards safety issues. The information does not represent a guarantee of the products' properties. Please find product specifications in the corresponding test reports. This information is subject to change.

