

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

- **Product identifier**
- **Trade name:** UP 4280 ISOCYANATE
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Polyurethane resin
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
AXSON TECHNOLOGIES (SHANGHAI) CO., LTD.
No 53 Taigu Road, WaiGaoQiao Free Trade Zone
Pudong 200131 Shanghai China
Phone: +86-21-5868-2962
Fax: +86-21-5868-2601
- **Further information obtainable from:** LAB. R&D -(0086)21 5868 3037
- **Emergency telephone number:** (0086)21 5868 3037

SECTION 2: Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Xn; Harmful
R20-40-48/20: Harmful by inhalation. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation.
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- Xn; Sensitising
R42/43: May cause sensitisation by inhalation and skin contact.
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- Xi; Irritant
R36/37/38: Irritating to eyes, respiratory system and skin.

· Label elements

- **Labelling according to EU guidelines:**
The product has been marked in accordance with EU Directives / respective national laws.
- **Code letter and hazard designation of product:**



Xn Harmful

- **Hazard-determining components of labelling:**
diphenylmethane-4,4'-di-isocyanate
- **Risk phrases:**
20 Harmful by inhalation.
36/37/38 Irritating to eyes, respiratory system and skin.
40 Limited evidence of a carcinogenic effect.
42/43 May cause sensitisation by inhalation and skin contact.
48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- **Safety phrases:**
23 Do not breathe gas/fumes/vapour/spray.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.07.2014

Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 1)

36/37 Wear suitable protective clothing and gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

60 This material and its container must be disposed of as hazardous waste.

Special labelling of certain preparations:

Contains isocyanates. See information supplied by the manufacturer

SECTION 3: Composition/information on ingredients**Chemical characterization: Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.**Dangerous components:**

CAS: 101-68-8	diphenylmethane-4,4'-di-isocyanate	50-100%
EINECS: 202-966-0	Xn R20-40-48/20; Xn R42/43; Xi R36/37/38	
Reg.nr.: 01-2119457014-47	Carc. Cat. 3	
	Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	

SECTION 4: First aid measures**Description of first aid measures****General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Where massive quantities of product have been inhaled in aerosol or concentrated vapour forms : remove patient from affected area. transfer to hospital (to an intensive care unit if necessary) by medically equipped ambulance. While awaiting the arrival of medical help, assist the patient's breathing if this is indicated. Clinical and radiographic monitoring will be required over a prolonged period, since delayed pulmonary oedema may occur.

After skin contact: Immediately wash with water and soap and rinse thoroughly.**After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.**Information for 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

No further relevant information available.

SECTION 5: Firefighting measures**Extinguishing media****Suitable extinguishing agents:**

Carbon dioxide

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.07.2014

Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 2)

Fire-extinguishing powder

Foam

· **For safety reasons unsuitable extinguishing agents:** *Water*

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

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

(Traces)

· **Advice for firefighters**

· **Protective equipment:** *Wear self-contained respiratory protective device.*

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:** *Prevent seepage into sewage system, workpits and cellars.*

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

After approximately one hour, transfer to suitable drum containers. Do not close these (likelihood of CO₂ production). Cover tops only.

Leave open to air in a supervised area for 7 to 14 days before transferring to an authorized dumping site.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· **Handling:**

· **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Inform personnel of risks associated with the product, the precautions to be taken and procedures to follow where an accident occurs.

Avoid exposure to the material of persons having suffered from chronic respiratory affections (especially asthmatic and bronchitic persons) and those having an isocyanate allergy.

· **Information about fire - and explosion protection:** *Protect from heat.*

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** *Prevent any seepage into the ground.*

· **Information about storage in one common storage facility:** *Store away from foodstuffs.*

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Protect from humidity and water.

· **Specific end use(s)** *No further relevant information available.*

GB

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.07.2014

Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 3)

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

101-68-8 diphenylmethane-4,4'-di-isocyanate

WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
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· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

Fresh air mask

Short term filter device:

Filter A/P2

· **Protection of hands:**



Protective gloves

· **Material of gloves**

Neoprene gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Colour: Colourless

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.07.2014

Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 4)

- **Odour:** Characteristic
- **pH-value at 20 °C:** NA
- **Change in condition**
 - Melting point/Melting range:** NA
 - Boiling point/Boiling range:** NA
- **Flash point:** > 200 °C (P. Martens)
- **Ignition temperature:** >500 °C (DIN 51 794)
- **Self-igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Density at 20 °C:** 1.22 g/cm³ (ISO 1675:1985)
- **Solubility in / Miscibility with water:** Insoluble.
- **organic solvents:** Soluble in many organic solvents.
- **Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Violent reactions with -NHx, -OH and -SH- groups.
In the presence of water or humidity gas is produced (CO₂) and/or uncontrolled polymerization, possibly leading to internal pressure rises and consequent risk of container breach.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

101-68-8 diphenylmethane-4,4'-di-isocyanate

Oral	LD50	31600 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rabbit)
Inhalative	LC50/1h	172-187 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitisation** May cause sensitisation by inhalation and skin contact.

(Contd. on page 6)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

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Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 5)

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**

Tumors of the lung were observed on animals of laboratory exposed to the MDI in the form of respirable aerosol

SECTION 12: Ecological information

· **Toxicity**

· **Aquatic toxicity:**

101-68-8 diphenylmethane-4,4'-di-isocyanate

EC50 (24h) > 1000 mg / l (daphnia)

EC50 (3h) > 100 mg / l (bacteria)

LC 50 (96h) > 1000 mg / l (fish)

· **Persistence and degradability** No further relevant information available.

· **Other information:**

This product is not miscible in water. It acts on water, producing CO₂ and polyurea (a solid, non-fusible and insoluble compound) which is, to the best of our knowledge, inert and non-biodegradable. This reaction is promoted by the presence of surfactants such as liquide soap, or water-soluble solvents. Do not dispose of this product or the neutralization products in sewers, rivers or streams.

· **Behaviour in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Dispose of the product by burning in a suitable incinerator or bury in an approved landfill following all applicable local and/or national regulations.

· **European waste catalogue**

08 05 01 | waste isocyanates

· **Uncleaned packaging:**

· **Recommendation:**

Empty containers may not be disposed of unless any remaining material adhering to the internal walls has been removed.

Disposal must be made according to official regulations.

SECTION 14: Transport information

· **UN-Number**

· **ADR, IMDG, IATA**

Void

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.07.2014

Version number 1

Revision: 07.07.2014

Trade name: UP 4280 ISOCYANATE

(Contd. of page 6)

- **UN proper shipping name**
- **ADR, IMDG, IATA** Void
- **Transport hazard class(es)**
- **ADR, IMDG, IATA**
- **Class** Void
- **Packing group**
- **ADR, IMDG, IATA** Void
- **Environmental hazards:** Not applicable.
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **Transport/Additional information:** Not dangerous according to the above specifications.

SECTION 15: Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- R20 Harmful by inhalation.
- R36/37/38 Irritating to eyes, respiratory system and skin.
- R40 Limited evidence of a carcinogenic effect.
- R42/43 May cause sensitisation by inhalation and skin contact.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.