

# SAFETY DATA SHEET

Product Name: 6100

Date issued : 2004/10/09

Date revised: 2019/12/17

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: RESIN 6100

Company name: Scott AM Ltd

Address: Sutherland Works, Beaufort Road, Longton, Stoke on Trent,  
Staffordshire, ST3 1RH, United Kingdom

Telephone: +44 (0) 1782 367 625

## 2. HAZARDS IDENTIFICATION

(Remarks: Those dangerous/hazardous properties which are out of classification subject, out of classification range and those which can't be classified are not described in this data sheet)

GHS classification:

Acute toxicity(Inhalation)	Division 4
Corrosive/Irritation effect against skin	Division 2
Heavy damage/irritation against eyes	Division 2A
Respiration organ sensitization	Division 1
Skin sensitization	Division 1
Specific target organ/whole body toxicity(Single cycle exposure)	Division 3

GHS label element: Graphic indication or symbol:



Word to call attention: Dangerous

Dangerous/hazardous property information:

Hazardous if inhaled.

Skin irritation.

Strong eye irritation.

It may cause allergic disease, pulmonary edema or difficult breath-ability if inhaled.

It may cause allergic skin reaction. It may irritate respiration organ.

It will generate carbon dioxide if water gets into container and over-pressure may damage container.

Notice:

[Precautions] Don't handle it before reading and understanding all safety precautions.

Obtain its handling instructions before use.

Don't eat or smoke during using this product.

Separate from ignition sources like heat, spark, naked fire, high temperature, etc.

Use explosion-proof electric equipment, ventilation unit and lighting apparatus.

Prevent fire ignition from static electricity discharge or spark.

Use ventilation unit or individual equipment to protect from exposure.

Wash hands well after handling.

Take care not to emit it to the environment.

Avoid contact with water or alkaline material.

Wear protective gloves, protective goggles and protective clothing.

Use it in well-ventilated area or outside.

Don't inhale powder dust, smoke, gas, mist, vapor or spray from the product.

[Measures against fire] Take appropriate extinguishing method in case of fire.

## SAFETY DATA SHEET

Product Name: 6100



[First aid] Inhalation: Let him move to fresh air area and take rest with easy-to-breath pose.

Ingestion: Don't induce vomiting.

Eyes: Flush with water carefully for several minutes. Remove and wash contact lens if it is easily removable.

Skin: Wash with a lot of water and soap.

Skin(or hair): Remove all contaminated clothing immediately. Wash contaminated protective clothing if it should be used again.

In case of exposure or if there is a doubt of exposure: Consult with doctor to receive medical treatment. Recover leaked material.

[Storage] Close container tightly and store it under cool and well-ventilated condition.

[Disposal] Ask specialized industrial waste disposal firm who has approval from metropolis and districts governor for disposal of raw materials and emptied container.

### 3. COMPOSITION, INFORMATION ON INGREDIENTS

Classification between single product and mixture: Mixture

Chemical name: Polyisocyanate

Component and content :

4,4'-Diphenylmethane diisocyanate

Content: 50%

Molecular formula: C<sub>15</sub>H<sub>10</sub>N<sub>2</sub>O<sub>2</sub>

CAS Number: 101-68-8

Diphenylmethane diisocyanate variant

Content: 25%

Molecular formula : -

CAS No.: 9048-57-1

Di-2 ethyl hexyl maleate

Content: 25%

Molecular formula : C<sub>20</sub>H<sub>36</sub>O<sub>4</sub>

CAS No.: 142-16-5

Remarks: Contents are typical values and not the specification.

### 4. FIRST AID MEASURES

Skin: Wash with lot of water and soap thoroughly. Remove contaminated clothing and shoes.

Receive doctor's advice if any symptom develops or pain sustains.

Eyes: Flush with water for more than 15 minutes and call physician.

Inhalation: Let him move to fresh air area immediately. If he is not breathing, unfasten his shirt securing easy breathing and give him artificial respiration.

Let him keep rest and warm while covering body with blanket.

Consult physician to receive immediate medical treatment.

Ingestion: Don't Induce vomiting. Vomiting may increase danger as It is a volatile material.

Receive doctor's advice quickly.

It is helpful to let him wash inside his mouth with water.

Never give anything from mouth if he is unconscious.

### 5. FIRE-FIGHTING MEASURES

Extinguishing media: Powder dry chemicals, carbon dioxide, foam or large amount of spray water.

Firefighting measures: To fight against the fire of initial stage, use powder and carbon dioxide.

In case of fires of large scale, use foam to shut out the air. Mass ejection of

# SAFETY DATA SHEET

Product Name: 6100



water may increase the danger of fire to spread.

Protection for fire fighters: Self-contained breathing apparatus must be used to protect from isocyanate vapor which may generate during extinguishing work.

## 6. ACCIDENTAL RELEASE MEASURES

Precautions for workers: Wear protective equipment during work and avoid inhalation of vapor or contact with skin.

Prohibit use of fire. Remove quickly any fire sources near by.

From waste liquid treated with neutralizing agent, carbon dioxide may generate.

Never close container tight which contains such waste liquid.

Precautions for environment: In case of large amount of spill, forbid outsider to enter area and try spill not to spread including flow into drainage by enclosing with earth and sand, etc. Recover spilled liquid as much as possible.

Container which contains recovered liquid should not be closed tightly.

After recovery, contaminated floor is to be treated with neutralizing agent to minimize hazard from isocyanate.

Removal method: After having treated the floor with neutralizing agent or collected spill with absorbent material like sand, soil, sawdust, etc. wash the floor thoroughly with water.

Example of neutralizing agent: (Parts by weight)

Water: 90 - 95%

Sodium carbonate: 5 - 10%

Liquid detergent: 0.2 - 0.5%

## 7. HANDLING AND STORAGE

(Work in accordance with relevant law and act such as Fire Services Act, Safety & Hygiene Act, Toxic & Violent Product Act.)

Handling: Install a local ventilation at the place of handling.

Use protective equipment like protective goggles, gloves, etc. to avoid direct contact.

Depending on the needs, wear respiratory protection like gas mask, etc.

Handle containers with care not to spill the material contained.

Recommend hand and mouth-wash after each handling.

Make handling place no-smoking and prohibit use of naked fire and high heat generator.

Pay due attention to avoid contact with water, etc. which reacts with isocyanate.

Storage: Close container tightly and store in dry, cool and dark place refraining from direct sun light.

When opened once, purge container with nitrogen gas or dry air and close tightly again.

Prohibit fire around the place of storage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Facilities to handle this product should be closed system and floors suited are those made from non-permeable material.

For areas handling this product, it is desirable to install a local ventilation.

It is recommended to install facility to wash eyes and body near such area.

For security, we recommend to keep sufficient number of protective equipment and sufficient amount of neutralizing agent in stock.

Protective equipment:

for respiratory organ: Gas mask for organic gas

for hand : Solvent resistant protective glove

## SAFETY DATA SHEET

Product Name: 6100



for eyes : Protective glasses with side shield or goggle.  
for skin and body : Working clothing and safety shoes.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Colorless clear liquid  
Odor : Almost none  
Viscosity at 25°C : 40 mPa.s  
pH : -  
Melting/Solidification point: Freezes at temperatures of -10°C and below  
Boiling point, First distillation point and Boiling point range: -  
Flash point : 198°C  
Ignition point : -  
Combustion or Explosion range, lower and upper limit:  
Vapor pressure : -  
Specific Gravity at 25°C: 1.14  
Solubility : Soluble in benzene, toluene, chlorbenzene and acetone.  
Octanol/water distribution ratio: -  
Decomposition temperature: -

### 10. STABILITY AND REACTIVITY

Stability : Stable under normal conditions.  
Reactivity : Very active. Reacts with water, amine, alcohol and other compounds containing active hydrogen and generates heat.  
It generates carbon dioxide when reacted with water.

### 11. TOXICOLOGICAL INFORMATION

#### Diphenylmethane diisocyanate(M-MDI)

Acute toxicity: Oral, Rat LD<sub>50</sub> > 5000 mg/ kg  
Via skin, Rabbit LD<sub>50</sub> > 10000 mg/ kg  
Inhalation(vapor), Rat LC<sub>50</sub> 370 - 490 mg/ m<sup>3</sup>/ 4 hr  
Skin corrosive toxicity /Toxicity: (Rabbit) Slight Irritation  
Heavy damage/irritation against eyes: (Rabbit) Medium level Irritation  
Respiration organ sensitization: (Guinea pig) Cause sensitization  
Skin sensitization : SD<sub>50</sub>: (Mouse): 0.73 mg/ kg  
(Guinea pig) Cause sensitization  
Reproduction cell mutagenicity : Circular notice from Welfare and Labor Ministry describes 4,4'-MDI as an existing chemical substance which shows mutagenic effect.  
*in vivo* mutagenic (Micro-organism) test (Rat typhoid bacillus): Positive  
*in vivo* chromosome abnormal test(Human being) Lymph cell: Negative  
*in vivo* small nucleus test mouse Red blood cell: Negative  
Carcinogenic property : EPA-CBD IARC MAK-3B  
Target organ/whole body toxicity(Single cycle exposure): GHS Classification Section 3(Irritation of breathing organ)  
Target organ/whole body toxicity(Repeated exposure): Can't be classified  
(Man kind) Decrease of respiration function and increase of lung disease  
(Rat) Increase of nest and multi-nest like lung cell and fine bronchial tube lung cell  
Diseases caused by chemical substances(compound) which are specified by the Labor Standards Act:  
Inflammation of skin, front eyes area or respiration organ disease.

## SAFETY DATA SHEET

Product Name: 6100



### 12. ECOLOGICAL INFORMATION

Take care in handling as it may affect environment during leakage or disposal.

Diphenylmethane diisocyanate(M-MDI)

Hazardous effect against aquatic environment

Toxicity: Fish LC50 (Zebra fish) > 10000 mg/l / 96 hr  
(Himedaka) > 0.5 mg/l / 96 hr

Micro-organism EC50(Active contaminated soil) 3217 mg/l / 3 hr  
EC50(Bacteria) > 100 mg/l

Crustacean EC50(Water flea) > 1000 mg/l / 24 hr  
>= 500 mg/l / 24 hr

Alga NOEC (Scenedesmus) 1640 mg/l / 72 hr

Decomposition property: Micro-organism: Difficult-to-decompose

Concentration property: Fish: No high concentration (Carp)

### 13. DISPOSAL CONSIDERATIONS (Follow national laws, local regulations, etc.)

Raw materials : Dispose of on a suitable incineration facility.

Ask authorized industrial waste disposal companies for disposal.

Dispose of as a solid material after reacting with A component.

Empty container: Put neutralizing agent into empty container to minimize reactivity and wash with water.

Make holes in emptied container so that the container can't be used for other purposes any more.

Ask authorized industrial waste disposal companies for the disposal.

### 14. TRANSPORT INFORMATION

#### International Regulations

#### IATA

Not regulated as dangerous goods

#### IMDG

Not regulated as dangerous goods

#### Transport in bulk according to Annex II MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### Special precautions for user

Not applicable

### 15. REGULATORY INFORMATION

Fire Services Act : Dangerous class III, 3th Petroleum group, 4th Dangerous Material group.

Safety & Hygiene Act:

Specified Chemical Substance: Not applicable

Organic Solvent : Not applicable

Substance to indicate (Article 57):

(599) Methylene bis(4.1-phenylene) diisocyanate

Substance to notice(Section 1 of Article 57-2):

(599) Methylene bis(4.1-phenylene) diisocyanate

Mutagenic substance(Circular notice from Welfare and Labor Ministry) : Not applicable

# SAFETY DATA SHEET

Product Name: 6100



Toxic and Violent Material Control Act : Not applicable

Chemical Substance Control Promotion Act: First Class Specified Chemical Substance:

Methylene bis(4.1-phenylene) diisocyanate\*

Export Trade Control Order: Catch-All Controls

\* Methylene bis(4.1-phenylene) diisocyanate is another name for 4,4'-diphenylmethane diisocyanate.

## 16. OTHER INFORMATION:

- 1). Reference: 「Safety data sheet」 from PU raw materials suppliers.  
「Guide for safety handling of polyurethane raw material-(2014)」 from PU Raw Materials Assn.
- 2). This data sheet has been prepared by summarizing the latest information on the safe and general industrial handling of chemical product. No guarantee however is made to its accuracy and completeness.
- 3). Values in this data sheet are not guaranteed values.
- 4). This data sheet is subject to revision or modification due to the development of new information.
- 5). Users are requested to look and apply suitable safety measures if other chemical substances are mixed with the product or if the product is to be used under specific condition.
- 6). Evaluation of dangerous and hazardous properties is not always complete and all chemical products may hold undiscovered hazardous property. We therefore ask you to pay due attention in handling the product.