Product	8263 B
Revision Date	07/07/2016
Revision	1

Safety Data Sheet (SDS)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	**8263 B**
Synonyms, Trade Names	No information available.

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified Uses	No Information Available.
Uses Advised Against	No uses advised against are identified.

1.3 Details of the Supplier of the Safety Data Sheet

Supplier	Renishaw plc Brooms Road Stone Business Park Stone, Staffordshire ST15 0SH United Kingdom Tel: +44 (0) 1785 285000 (during UK office hours 09:00 to 17:00 UTC).
Contact Person	msds@renishaw.com

1.4 Emergency Telephone Number

Emergency Telephone	999 / 911 or local emergency number.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classifcation of the Substance or Mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified
Human Health	Acute Tox 4 - H332, Skin Irrit.2 - H315, Eye Irrit.2A - H319, Resp. Sens 1 - H334, Skin. Sens 1 - H317, Carc. 2 - H351, STOT SE 3 - H335, STOT RE 2 - H373
Environment	Not classified

2.2 Label Elements

Contains

4,4'-Diphenylmethane diisocyanate
Diphenylmethane diisocyanate variant

Label in Accordance With (EC) No. 1272/2008

Signal Word

Danger

Hazard Statements

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 (respiratory) through prolonged or repeated exposure :

inhalation.

Precautionary Statements

Prevention
P201 Obtain special instructions before use.
P260 Do not breathe dust/fume/ gas/mist/vapours/spray.
P280 Wear protective gloves/ protective clothing/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.
Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

2.3 Other Hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixtures

Name	Product Identifier	GHS Classification	%
4,4'-Diphenylmethane diisocyanate	CAS-No.: 101-68-8 EC No.: 202-966-0	Skin Irrit.2 - H315, Skin. Sens 1 - H317, Eye Irrit.2A - H319, Acute Tox 4 - H332, Resp. Sens 1 - H334, STOT SE 3 - H335, Carc. 2 - H351, STOT RE 2 - H373	30-60%
Diphenylmethane diisocyanate variant	CAS-No.: 9048-57-1 EC No.:	Skin Irrit.2 - H315, Eye Irrit.2A - H319, Resp. Sens 1 - H334, Skin. Sens 1 - H317, Carc. 2 - H351, STOT SE 3 - H335, STOT RE 2 - H373	30-60%

The Full Text for all Hazard Statements Are Displayed in Section 16.

Composition Comments The data shown are in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information Provide general first aid, rest, warmth and fresh air. As a general rule, in case of doubt or if symptoms persist, always call a doctor. Seek medical attention for all burns and eye injuries, regardless how minor they may seem. First aid personnel must be aware of own risk during rescue.

Inhalation If this product is inhaled and symptoms occur, move the exposed person to fresh air promptly. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

Ingestion If this product is ingested get medical attention immediately! Remove victim immediately from source of exposure. Rinse mouth thoroughly. DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, head should be kept low so that stomach content doesn't enter the lungs, and is not swallowed. Keep airway clear.

Skin Contact Immediately wash with water, preferably under a shower, removing contaminated clothing while washing proceeds. Continue to rinse for 15 minutes. Obtain medical attention if irritation persists or if blistering occurs. Contaminated clothing should be washed before re-use.

Eye Contact Do not rub eye. If this product contacts the eyes, gently flush eyes with water for at least fifteen (15) minutes, lifting the upper and lower eyelids occasionally. Avoid contaminating unaffected eye. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

General Information The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Symptoms of exposure include: Irritation eyes, nose, throat; respiratory

	sensitization; cough, pulmonary secretions, chest pain, dyspnea (breathing difficulty); asthma. Suspected of causing cancer.
Inhalation	Harmful if inhaled. May cause damage to the respiratory system through prolonged or repeated exposure by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
Ingestion	No specific symptoms noted.
Skin Contact	Causes skin irritation. May cause an allergic skin reaction.
Eye Contact	Causes serious eye irritation.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Notes to the Physician	Treat according to symptoms.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Extinguishing Media	Use fire-extinguishing media appropriate for surrounding materials: Foam, extinguishing powder, carbon dioxide, water spray.
Unsuitable Extinguishing Media	High volume water jet.

5.2 Special Hazards Arising From the Substance or Mixture

Hazardous Combustion Products	In case of fire, toxic gases (CO, CO2,) may be formed.
Unusual Fire & Explosion Hazards	No unusual fire or explosion hazards noted.
Specific Hazards	If heated, harmful vapours may be formed. Floors may become slippery, avoid falls.

5.3 Advice for Firefighters

Special Fire Fighting Procedures	For initial fire, use dry chemical, carbon dioxide or dry sand. In case of a massive fire, use foam extinguisher.
Protective Equipment for Firefighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions	Follow precautions for safe handling described in this safety data sheet. Read and follow manufacturer's recommendations. Do not touch or walk through spilled material. If necessary evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Use non-sparking hand tools and explosion proof electrical equipment. Read and follow manufacturer's recommendations. Do not touch or walk through spilled material. Keep unnecessary and unprotected personnel from entering.
For Emergency Responders	Follow safe handling advice and personal protective equipment recommendations for normal use of product.

6.2 Environmental Precautions

Environmental Precautions	Do not discharge onto the ground or into water courses.

6.3 Methods and Material for Containment and Cleaning Up

Spill Clean Up Methods	Use non sparking tools/equipment to clean up. DO NOT TOUCH SPILLED MATERIAL! Stop leak if possible without risk. Eliminate ignition sources. Ventilate area. Place spilled material into suitable labelled containers. Remove waste promptly to a safe area. If molten material is spilled, allow it to cool and solidify, then collect for recycle / disposal. Avoid raising dust. Cover spill with a decontamination solution made up of 2% detergent, 90% water, and 8% concentrated ammonia solution. Sweep or vacuum into an open container. Apply a loose lid for 72 hours to vent CO2. Place in metal containers for recovery or disposal.

6.4 Reference to Other Sections

Reference to Other Sections	See section 1 for emergency contact. For personal protection, see section 8. For waste

disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handling

Keep away from heat, sparks and open flame. Static electricity and formation of sparks must be prevented. Do not eat, drink or smoke when using the product. Do not use contact lenses. Avoid contact with skin and eyes. Avoid inhalation of vapours. Avoid prolonged or repeated contact. Obtain special instructions before use. Provide good ventilation.
Wear personal protective equipment. Handle and open container with care. Do not mix with other chemicals. Observe good industrial hygiene practices.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage Precautions

Store locked up. Keep out of reach of children. Store away from away from moisture and incompatible materials. Close container tightly and store in a dry, cool and dark place away from direct sunlight. To seal an opened container: purge container with nitrogen gas or dry air and close tightly. Prohibit ignition sources close to storage area.

Storage Class

Chemical storage - Store separately from acids, alkalies, oxidising agents and water.

7.3 Specific End Use(s)

Specific End Use(s)

The identified uses for this product are detailed in Section 1.

Usage Description

Use only according to directions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

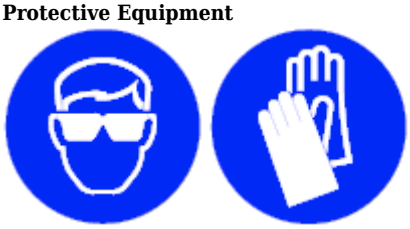
Component	STD	TWA (8 Hrs)		STEL (15mins)		Notes
4,4'-Diphenylmethane diisocyanate	NIOSH	0.005ppm	0.05mg/m3	0.02ppm	0.2mg/m3	

Ingredient Comments

No information available.

8.2 Exposure Controls

Protective Equipment



Engineering Measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Facilities for handling this product should be closed system. Ensure surfaces and floors are made from non-permeable material.

Respiratory Equipment

Where risk assessment shows air-purifying respirators are appropriate a full face respirator conforming to EN143. Use suitable respirator and cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as CEN (EU).
Change filters frequently. Use respiratory protection as specified by an industrial hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Type A/organic vapour protective components recommended.

Hand Protection

Selection of the glove material depends on consideration of the penetration times, rates of diffusion and degradation, and concentration specific to the workplace. Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374) is recommended. Gloves must be inspected prior to use.
Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Change gloves regularly. Use solvent resistant protective gloves. Consult manufacturer for specific advice.

Eye Protection

Wear safety goggles or face shield to prevent any possibility of eye contact. Use equipment

	for eye protection tested and approved under appropriate government standards such as EN 166(EU).
Other Protection	Wear appropriate clothing to prevent any possibility of skin contact. Suggested PPE: Fire/chemical resistant full-length overalls with electrically conductive safety shoes or grounding straps. Caution is required to avoid contact with unprotected electrical devices when wearing conductive safety shoes or grounding straps. Protective clothing should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Hygiene Measures	Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work. Handle in accordance with good industrial hygiene and safety practice.
Process Conditions	Ensure that eye flushing systems and safety showers are located close by in the work place.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Appearance	Liquid.
Colour	Light (or pale) yellow.
Odour	Almost none.
Odour Threshold - Lower	No information available.
Odour Threshold - Upper	No information available.
pH-Value, Conc. Solution	No information available.
pH-Value, Diluted Solution	No information available.
Melting Point	Freezes at temperatures below 0 °C
Initial Boiling Point and Boiling Range	No information available.
Flash Point	No information available.
Evaporation Rate	No information available.
Flammability State	No information available.
Flammability Limit - Lower(%)	No information available.
Flammability Limit - Upper(%)	No information available.
Vapour Pressure	No information available.
Vapour Density (air=1)	No information available.
Relative Density	1.19 g/cm3 at 25 °C
Bulk Density	No information available.
Solubility	Soluble in benzene, toluene, chlorbenzene and acetone.
Decomposition Temperature	No information available.
Partition Coefficient; n-Octanol/Water	No information available.
Auto Ignition Temperature (°C)	No information available.
Viscosity	180 mPas at 25 °C
Explosive Properties	No information available.
Oxidising Properties	No information available.

9.2 Other Information

Molecular Weight	No information available.

Volatile Organic Compound No information available.

Other Information None noted.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity Very active. Reacts with water, amine, alcohol and other compounds containing active hydrogen and generates heat. Generates carbon dioxide when reacted with water.

10.2 Chemical Stability

Stability Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous Reactions Reacts with water, amine, alcohol and other compounds containing active hydrogen.
Hazardous Polymerisation Unknown.
Polymerisation Description Unknown.

10.4 Conditions to Avoid

Conditions to Avoid Avoid heat, flames and other sources of ignition. High temperatures, humid conditions, contact with water, contact with oxidising substances, and sources of ignition such as sparks, static, open flames etc.

10.5 Incompatible Materials

Materials to Avoid Acids, alkalies, oxidising agents. Store separately from acids, alkalies, oxidising agents and water.

10.6 Hazardous Decomposition Products

Hazardous Decomposition Products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Reactions with compounds containing active hydrogen (water) generate heat and carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Toxicological Information No toxicological information for the overall finished product.

Acute Toxicity (Oral LD50) Diphenylmethane diisocyanate: Oral, Rat LD50 > 5000 mg/ kg.
Acute Toxicity (Dermal LD50) Diphenylmethane diisocyanate: Via skin, Rabbit LD50 > 10000 mg/ kg.
Acute Toxicity (Inhalation LD50) Diphenylmethane diisocyanate: Inhalation(vapor), Rat LC50 > 370 - 490 mg/ m3/ 4 hr.

Serious Eye Damage/Irritation Causes serious eye irritation.

Skin Corrosion/Irritation (Rabbit) Slight irritation.

Respiratory Sensitisation SD 50: (Mouse) 0.73 mg/kg.
Skin Sensitisation (Guinea pig) Causes sensitization.

Germ Cell Mutagenicity
Genotoxicity - In Vitro
Genotoxicity - In Vivo

Carcinogenicity Reproduction cell mutagenicity : Existing chemical substance which shows mutagenic effect.

Specific Target Organ Toxicity - Single Exposure:
STOT - Single Exposure May cause respiratory irritation.
Specific Target Organ Toxicity - Repeated Exposure:
STOT - Repeated Exposure May cause damage to respiratory system through prolonged or repeated exposure by inhalation.

Inhalation	Harmful if inhaled. May cause damage to the respiratory system through prolonged or repeated exposure by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
Ingestion	No specific symptoms noted.
Skin Contact	Causes skin irritation. May cause an allergic skin reaction.
Eye Contact	Causes serious eye irritation.
Waste Management	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste is suitable for incineration. Put neutralizing agent into empty container to minimize reactivity and wash with water. Dispose of as a solid material after reacting with A component.
Routes of Entry	No information available.
Target Organs	Eyes, respiratory system.
Aspiration Hazards:	No information available.
Reproductive Toxicity:	No information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Eco Toxilogical Information	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

12.2 Persistence and Degradability

Degradability	No information available.
Biological Oxygen Demand	No information available.
Chemical Oxygen Demand	No information available.

12.3 Bioaccumulative Potential

Bioaccumulative Potential	No data available on bioaccumulation.
Bioacculmation Factor	
Partition Coefficient; n-Octanol/Water	No information available.

12.4 Mobility in Soil

Mobility	Soluble in water.

12.5 Results of PBT and vPvB Assessment

Results of PBT and vPvB Assessment	No information available.

12.6 Other Adverse Effects

Other Adverse Effects	No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Management	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste is suitable for incineration. Put neutralizing agent into empty container to minimize reactivity and wash with water. Dispose of as a solid material after reacting with A component.

13.1 Waste Treatment Methods

Disposal Methods	Dispose of waste and residues in accordance with local authority requirements, and in accordance with all local, national and international regulations. For waste disposal, use a licensed industrial waste disposal agent or suitable incineration facility.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number

UN No. (ADR)	Not applicable.
UN No. (IMDG)	Not applicable.
UN No. (IATA)	Not applicable.

14.2 UN Proper Shipping Name

ADR Proper Shipping Name	Not applicable.
IMDG Proper Shipping Name	Not applicable.
IATA Proper Shipping Name	Not applicable.

14.3 Transport Hazard Class(es)

ADR Class	Not applicable.
IMDG Class	Not applicable.
IATA Class	Not applicable.
Transport Labels	Not applicable

14.4 Packing Group

ADR/RID/ADN Packing Group	Not applicable.
IMDG Packing Group	Not applicable.
IATA Packing Group	Not applicable.

14.5 Environmental Hazards

ADR	No
IMDG	No
IATA	No

14.6 Special Precautions for User

EMS	Not applicable.
Emergency Action Code	Not applicable.
Hazard No. (ADR)	Not applicable.
Tunnel Restriction Code	Not applicable.

14.7 Transport in Bulk According to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

EU Legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. The UN Globally Harmonized System (GHS) Safety Data Sheet format (Annex IV) is implemented as Annex II of REACH EU No 453/2010 of 20th May 2010 amending regulation (EC) No 1907/2006.
Approved Code of Practice	Workplace Exposure Limits Guidance Note EH40/2005.
Chemical Safety Assessment	No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

General Information	This Safety Data Sheet is in accordance with Reach Regulation (EC) No 453/2010.
Revision Comments	This is a first issue.
Revision Date	07/07/2016
Revision	1
Safety Data Sheet Status	Approved.

Hazard Statements In Full

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 [*].

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.