



SAFETY DATA SHEET

Instapak Quick® RT A

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

1.1 Product identifier

Product name	: Instapak Quick® RT A
EC number	: Not available.
CAS number	: 9016-87-9
Product code	: Not available.
Product description	: Polymethylene Polyphenylisocyanate (PMDI) mixture for the production of Instapak® polyurethane packaging foam.
Product type	: Liquid.
Other means of identification	: Not available.

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

Product use	: Polymethylene Polyphenylisocyanate (PMDI) mixture for the production of Instapak® polyurethane packaging foam.
Area of application	: Industrial applications.

1.3 Details of the supplier of the safety data sheet

Sealed Air B.V.
Lindhoutseweg 45
6545 AH Nijmegen,
Nederland
Tel.: +31 (0)24 3710111

To contact Sealed Air with your Environmental, Health and Safety questions please either:

e-mail address of person responsible for this SDS : EHSinstapak@sealedair.com

National contact

Sealed Air Limited,
Telford Way, Kettering, Northants NN16 8UN England,
Telephone: 01536 315700
Fax: 01536 410576

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Call 111 if you urgently need medical help or advice but it's not a life-threatening situation (NHS 111 service).
In Cornwall, the Scilly Isles, Luton and Bedfordshire areas call 0845 4647 (NHS Direct).
For immediate, life-threatening emergencies, call 999 (Emergency and urgent care services).

Supplier

Telephone number : +31(0) 24 37 10 164 (9.00 - 17.00 CET)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Polymer (Polymer present inside the article.)

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H332

Skin Irrit. 2, H315

Eye Irrit. 2, H319

Resp. Sens. 1, H334

Skin Sens. 1, H317

Carc. 2, H351 (inhalation)

STOT SE 3, H335

STOT RE 2, H373 (dermal)

STOT RE 2, H373 (inhalation)

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H332 - Harmful if inhaled.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 - May cause an allergic skin reaction.
H351 - Suspected of causing cancer if inhaled.
H335 - May cause respiratory irritation.
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled. May cause damage to organs through prolonged or repeated exposure in contact with skin.

Precautionary statements

Prevention

: P260 - Do not breathe vapour.
P280 - Wear protective gloves and eye protection.
P284 - In case of inadequate ventilation wear respiratory protection.

Response

: P302 - IF ON SKIN:
P352 - Wash with plenty of soap and water.
P305 - IF IN EYES:
P351 - Rinse cautiously with water for several minutes.
P338 - Remove contact lenses, if present and easy to do. Continue rinsing.
P308 - IF exposed or concerned:
P313 - Get medical attention.

Storage

: P405 - Store locked up.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients

: Diphenylmethanediisocyanate, isomers and homologues

Supplemental label elements

: Contains isocyanates. May produce an allergic reaction.

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SECTION 2: Hazards identification

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards


Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

SECTION 3: Composition/information on ingredients

3.1 Substances : Polymer (Polymer present inside the article.)

Product/ingredient name	Identifiers	%	Classification	
			Regulation (EC) No. 1272/2008 [CLP]	Type
 phenylmethanediisocyanate, isomers and homologues	CAS: 9016-87-9	100	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 (inhalation) STOT SE 3, H335 STOT RE 2, H373 (dermal) STOT RE 2, H373 (inhalation)	[A]
4,4'-methylenediphenyl diisocyanate	EC: 202-966-0 CAS: 101-68-8 Index: 615-005-00-9	<0.1	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373 See Section 16 for the full text of the H statements declared above.	[B]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

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SECTION 3: Composition/information on ingredients

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : This product is a respiratory irritant and potential respiratory sensitizer: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction. Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitizers including diisocyanates. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

SECTION 4: First aid measures

Ingestion : Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire. In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media : Do not allow water to enter container because a violent reaction may occur. Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
hydrogen cyanide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : 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

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

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SECTION 7: Handling and storage

Store between the following temperatures: 10 to 40°C (50 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Use original container.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Diphenylmethanediisocyanate, isomers and homologues	EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser. Notes: as NCO STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.
4,4'-methylenediphenyl diisocyanate	EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitiser. STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

SECTION 8: Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 1 - 4 hours (breakthrough time): butyl rubber, neoprene, nitrile rubber, Viton®.
Short term exposure Hand protection, gloves breakthrough time >30 min: butyl rubber, neoprene, Nitrile gloves., Viton®.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Brown. [Dark]
- Odour** : Earthy (Odour)
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : -36°C (Pour point) ISO 3016
- Initial boiling point and boiling range** : >300°C DIN 53171
- Flash point** : Closed cup: >200°C
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Upper/lower flammability or explosive limits** : Not available.
- Vapour pressure** : MDI < 0.00001 hPa at 20°C
- Vapour density** : 8.5 [Air = 1]
- Relative density** : 1.23 [Water = 1] at 20°C DIN 51757

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SECTION 9: Physical and chemical properties

Solubility(ies)	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Dynamic (room temperature): 180 to 240 mPa·s at 25°C DIN 53019
Explosive properties	: Not available.
Oxidising properties	: Not available.

9.2 Other information

Density	: 1.23 g/cm ³ [20°C]
Physical/chemical properties comments	: No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Stable under normal conditions. Polymerises at about 200°C with evolution of carbon dioxide.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur. Uncontrolled exothermic reactions occur with amines and alcohols. The product reacts slowly with water, resulting in the production of carbon dioxide. In closed containers, pressure build-up could result in distortion, expansion and, in extreme cases, bursting of the container. Uncontrolled exothermic reactions occur with amines and alcohols. The product reacts slowly with water, resulting in the production of carbon dioxide. In closed containers, pressure build-up could result in distortion, expansion and, in extreme cases, bursting of the container. Under normal conditions of storage and use, hazardous polymerisation will not occur.
10.4 Conditions to avoid	: Avoid high temperature and moisture.
10.5 Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials, acids, alkalis and moisture. alcohols and amines.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethanediisocyanate, isomers and homologues	LC50 Inhalation Dusts and mists	Rat - Male, Female	1.5 mg/l Estimated.	4 hours
	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.31 mg/l	4 hours
	LD50 Dermal	Rabbit - Male, Female	>9400 mg/kg	-
4,4'-methylenediphenyl	LD50 Oral	Rat - Male	>10000 mg/kg	-
	LD50 Oral	Rat	9200 mg/kg	-

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SECTION 11: Toxicological information

diisocyanate

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4,4'-methylenediphenyl diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-

Conclusion/Summary : Not available.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Diphenylmethanediisocyanate, isomers and homologues	skin	Guinea pig	Not sensitizing
	Respiratory skin	Rat Mouse	Sensitising Sensitising

Conclusion/Summary : Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Diphenylmethanediisocyanate, isomers and homologues	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative

Conclusion/Summary : Not available.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethanediisocyanate, isomers and homologues	Positive - Inhalation - TC	Rat - Male, Female	0 to 6 mg/m ³	2 years; 5 days per week

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethanediisocyanate, isomers and homologues	Negative - Inhalation	Rat - Female	0 to 12 mg/m ³	20 days; 6 hours per day

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Diphenylmethanediisocyanate, isomers and homologues	Category 3	Not applicable.	Respiratory tract irritation
4,4'-methylenediphenyl diisocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

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SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
Diphenylmethanediisocyanate, isomers and homologues	Category 2	Skin Inhalation	Not determined Not determined
4,4'-methylenediphenyl diisocyanate	Category 2	Not determined	Not determined

Aspiration hazard

Not available.

Information on likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction. Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.
- Ingestion** : Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

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SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethanediisocyanate, isomers and homologues	Sub-acute NOEL Inhalation Dusts and mists	Rat - Male, Female	0.2 mg/m ³	2 years; 6 hours per day

Conclusion/Summary	: No known significant effects or critical hazards.
General	: May cause damage to organs through prolonged or repeated exposure if inhaled or in contact with skin. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m ³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m ³ and no effects at 0.2 mg/m ³ . Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations, which are well in excess of defined occupational exposure limits.
Fertility effects	: No known significant effects or critical hazards.
Other information	: Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Diphenylmethanediisocyanate, isomers and homologues	EC50 >100 mg/l	Micro-organism	3 hours
	Acute EC50 >1640 mg/l	Algae	72 hours Static
	Acute EC50 >1000 mg/l	Daphnia - Daphnia magna	24 hours
	Chronic NOEC >10 mg/l	Daphnia	21 days Semi-Static

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Diphenylmethanediisocyanate, isomers and homologues	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	0 % - 28 days	-	-
4,4'-methylenediphenyl diisocyanate	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	0 % - 28 days	-	-

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SECTION 12: Ecological information

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Diphenylmethanediisocyanate, isomers and homologues	Fresh water 0.92 days, 25°C	-	Not readily
4,4'-methylenediphenyl diisocyanate	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Diphenylmethanediisocyanate, isomers and homologues	-	<14	low
4,4'-methylenediphenyl diisocyanate	4.51	200	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.
P: Not available. B: Not available. T: Not available.

vPvB : Not applicable.
vP: Not available. vB: Not available.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
08 05 01*	waste isocyanates
15 01 10*	packaging containing residues of or contaminated by hazardous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration should only be considered when recycling is not feasible.

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SECTION 13: Disposal considerations

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

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SECTION 15: Regulatory information

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Diphenylmethanediisocyanate, isomers and homologues	Carc. 2, H351 (inhalation)	-	-	-
4,4'-methylenediphenyl diisocyanate	Carc. 2, H351	-	-	-

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment

: This product contains substances for which Chemical Safety Assessments are not yet completed.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative
 Regulation (EC) No. 1272/2008 [CLP]; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); Regulation for the transport of dangerous materials on the Rhine (ADN); Occupational exposure limits; International regulations

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Resp. Sens. 1, H334	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351 (inhalation)	Expert judgment
STOT SE 3, H335	Calculation method
STOT RE 2, H373 (dermal)	Expert judgment

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SECTION 16: Other information

STOT RE 2, H373 (inhalation)	Expert judgment
Full text of abbreviated H statements	<p>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 (inhalation) Suspected of causing cancer if inhaled. H351 Suspected of causing cancer. H373 (dermal) May cause damage to organs through prolonged or repeated exposure in contact with skin. H373 (inhalation) May cause damage to organs through prolonged or repeated exposure if inhaled. H373 May cause damage to organs through prolonged or repeated exposure.</p>
Full text of classifications [CLP/GHS]	<p>Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4 Carc. 2, H351 (inhalation) CARCINOGENICITY (inhalation) - Category 2 Carc. 2, H351 CARCINOGENICITY - Category 2 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 Resp. Sens. 1, H334 RESPIRATORY SENSITIZATION - Category 1 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2 Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1 STOT RE 2, H373 (dermal) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (dermal) - Category 2 STOT RE 2, H373 (inhalation) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (inhalation) - Category 2 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p>
Training advice	: Ensure operatives are trained to minimise exposures. Training staff on good practice.
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Version	: 2.01

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