SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture	Back Up Pads
Registration number	-
Synonyms	None.
Issue date	27-August-2018
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Sanding, polishing various surfaces.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier	Ferro Industries, Inc. 35200 Union Lake Road Harrison Township, MI 48045 +1 586-792-6001 (7:00 A.M. - 4:30 P.M. EST)
Contact person	Product Responsibility Manager
E-mail	ferroindustries@gmail.com
Emergency telephone number	For Chemical Emergency ONLY, call: +1 800-832-4357

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, inhalation	Category 4	H332 - Harmful if inhaled.
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Respiratory sensitisation	Category 1	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.
Specific target organ toxicity - single exposure	Category 3 respiratory tract irritation	H335 - May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Category 2 (Inhalation, Kidneys)	H373 - May cause damage to organs (Inhalation, Kidneys) through prolonged or repeated exposure.

Hazard summary Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer. Causes serious eye irritation. Causes skin irritation. May cause irritation to the respiratory system. Exposure to powder or dusts may be irritating to eyes, nose and throat. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Diphenylmethane-4-4'-diisocyanante (MDI), Dipropylene Glycol, Ethylene glycol, Methylene bis(isocyanatobenzene) homopolymer, Methylenediphenyl diisocyanate (MDI), Triethyl phosphate, Triethylendiamine

Hazard pictograms

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 (Inhalation, Kidneys) through prolonged or repeated exposure.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P304 + P340	IF INHALED: Remove person to fresh air and keep 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.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE/doctor.

Storage Not available.

Disposal Not available.

Supplemental label information None.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Diphenylmethane-4-4'-diisocyanante (MDI)	>=25,0 - < 50,0	101-68-8 202-966-0	-	615-005-00-9	
Classification:	Skin Irrit. 2;H315, Skin Sens. 1;H317, Eye Irrit. 2;H319, Acute Tox. 4;H332, Resp. Sens. 1;H334, STOT SE 3;H335, Carc. 2;H351, STOT RE 2;H373				2,C
Ethylene glycol	>= 3,0 - < 7,0	107-21-1 203-473-3	-	603-027-00-1	#
Classification:	Acute Tox. 4;H302, STOT RE 2;H373				
Dipropylene Glycol	>=1,0 - < 3,0	25265-71-8 246-770-3	-	-	
Classification:	-				
Methylene bis(isocyanatobenzene) homopolymer	>=1,0 - < 3,0	39310-05-9 -	-	-	
Classification:	-				
Methylenediphenyl diisocyanate (MDI)	>=1,0 - < 3,0	26447-40-5 247-714-0	-	615-005-00-9	
Classification:	Skin Irrit. 2;H315, Skin Sens. 1;H317, Eye Irrit. 2;H319, Acute Tox. 4;H332, Resp. Sens. 1;H334, STOT SE 3;H335, Carc. 2;H351, STOT RE 2;H373				2,C
Triethyl phosphate	>=1,0 - < 3,0	78-40-0 201-114-5	-	015-013-00-7	
Classification:	Acute Tox. 4;H302, Eye Irrit. 2;H319				

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Triethylendiamine	>= 0,3 - < 1,0	280-57-9 205-999-9	-	-	
Classification:	Flam. Sol. 1;H228, Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Dam. 1;H318				
Other components below reportable levels	41,1				

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.

Note 2: The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.

Note C: Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Composition comments The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Coughing. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Water.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots. Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
For emergency responders	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up	Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimise dust generation and accumulation. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimise dust generation and accumulation. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
7.2. Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).
7.3. Specific end use(s)	Sanding, polishing various surfaces.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0,1 mg/m3
		0,01 ppm
	MAK	0,05 mg/m3
		0,005 ppm
Ethylene glycol (CAS 107-21-1)	Ceiling	52 mg/m3
		20 ppm
	MAK	26 mg/m3
		10 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0,1 mg/m3
		0,01 ppm
	MAK	0,05 mg/m3
		0,005 ppm

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,052 mg/m3	
		0,005 ppm	
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	Aerosol
		40 ppm	Aerosol
	TWA	52 mg/m3	Aerosol
		20 ppm	Aerosol
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,052 mg/m3	
		0,005 ppm	

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,07 mg/m3
	TWA	0,05 mg/m3
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,07 mg/m3
	TWA	0,05 mg/m3

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	MAC	52 mg/m3
		20 ppm
	STEL	104 mg/m3
		40 ppm

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,2 mg/m3
		0,02 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,2 mg/m3
		0,02 ppm

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0,1 mg/m3
	TWA	0,05 mg/m3
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3
	TWA	50 mg/m3

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0,1 mg/m3
	TWA	0,05 mg/m3

Denmark. Exposure Limit Values

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TLV	0,05 mg/m3	
		0,005 ppm	
Ethylene glycol (CAS 107-21-1)	TLV	26 mg/m3	
		10 mg/m3	Aerosol
		10 ppm	
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TLV	0,05 mg/m3	
		0,005 ppm	

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0,1 mg/m3
		0,01 ppm
	TWA	0,05 mg/m3
		0,005 ppm
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0,01 ppm
	TWA	0,005 ppm

Finland. Workplace Exposure Limits

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,035 mg/m3
Ethylene glycol (CAS 107-21-1)	STEL	100 mg/m3
		40 ppm
	TWA	50 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,035 mg/m3

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	VLE	0,2 mg/m3	

Regulatory status: Indicative limit (VL)

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
		0,02 ppm	
Regulatory status: Indicative limit (VL)			
	VME	0,1 mg/m3	
Regulatory status: Indicative limit (VL)			
		0,01 ppm	
Regulatory status: Indicative limit (VL)			
Ethylene glycol (CAS 107-21-1)	VLE	104 mg/m3	Vapour.
		40 ppm	Vapour.
	VME	52 mg/m3	Vapour.
		20 ppm	Vapour.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	VLE	0,2 mg/m3	
Regulatory status: Indicative limit (VL)			
		0,02 ppm	
Regulatory status: Indicative limit (VL)			
	VME	0,1 mg/m3	
Regulatory status: Indicative limit (VL)			
		0,01 ppm	
Regulatory status: Indicative limit (VL)			

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,05 mg/m3	Inhalable fraction.
Dipropylene Glycol (CAS 25265-71-8)	TWA	100 mg/m3	Vapor and aerosol, inhalable fraction.
Ethylene glycol (CAS 107-21-1)	TWA	26 mg/m3	Vapour and aerosol.
		10 ppm	Vapour and aerosol.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,05 mg/m3	Inhalable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	AGW	0,05 mg/m3	Inhalable fraction.
Dipropylene Glycol (CAS 25265-71-8)	AGW	100 mg/m3	Inhalable fraction.
Ethylene glycol (CAS 107-21-1)	AGW	26 mg/m3	Vapour and aerosol.
		10 ppm	Vapour and aerosol.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	AGW	0,05 mg/m3	Inhalable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,2 mg/m3	
		0,02 ppm	
	TWA	0,2 mg/m3	
		0,02 ppm	

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	STEL	125 mg/m3	Vapour.
		50 ppm	Vapour.
	TWA	125 mg/m3	Vapour.
		50 ppm	Vapour.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,2 mg/m3	
		0,02 ppm	
	TWA	0,2 mg/m3	
		0,02 ppm	

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,05 mg/m3
	TWA	0,05 mg/m3
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
	TWA	52 mg/m3
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,05 mg/m3
	TWA	0,05 mg/m3

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,1 mg/m3	
		0,01 ppm	
	TWA	0,05 mg/m3	
		0,005 ppm	
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	
		40 ppm	
	TWA	26 mg/m3	Mist.
		26 mg/m3	
		10 ppm	
		10 ppm	Mist.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,1 mg/m3	
		0,01 ppm	
	TWA	0,05 mg/m3	
		0,005 ppm	

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,07 mg/m3	
	TWA	0,02 mg/m3	
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	Vapour.
		40 ppm	Vapour.
	TWA	52 mg/m3	Vapour.

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
		10 mg/m3	Particulate.
		20 ppm	Vapour.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,07 mg/m3	
	TWA	0,02 mg/m3	

Italy. OELs

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,005 ppm
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,005 ppm

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0,1 mg/m3
		0,01 ppm
	TWA	0,05 mg/m3
		0,005 ppm
Ethylene glycol (CAS 107-21-1)	STEL	50 mg/m3
		20 ppm
	TWA	25 mg/m3
		10 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0,01 ppm
	TWA	0,005 ppm

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm

Netherlands. OELs (binding)

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	Vapour.
	TWA	52 mg/m3	Vapour.
		10 mg/m3	Mist.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,01 ppm
	TLV	0,05 mg/m3
		0,005 ppm
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TLV	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,01 ppm
	TLV	0,05 mg/m3
		0,005 ppm
		0,005 ppm

Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,09 mg/m3
	TWA	0,03 mg/m3
Ethylene glycol (CAS 107-21-1)	STEL	50 mg/m3
	TWA	15 mg/m3
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,09 mg/m3
	TWA	0,03 mg/m3

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,005 ppm	
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,005 ppm	

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,15 mg/m3
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,15 mg/m3

Slovakia. OELs. Decree of the government of the Slovak Republic concerning protection of health in work with chemical agents

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,03 mg/m3
		0,002 ppm
Ethylene glycol (CAS 107-21-1)	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,03 mg/m3
		0,002 ppm

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,05 mg/m3
Ethylene glycol (CAS 107-21-1)	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,05 mg/m3

Spain. Occupational Exposure Limits

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0,052 mg/m3
		0,005 ppm

Spain. Occupational Exposure Limits

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0,052 mg/m3
		0,005 ppm

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0,05 mg/m3
		0,005 ppm
	TWA	0,03 mg/m3
		0,002 ppm
Ethylene glycol (CAS 107-21-1)	Ceiling	104 mg/m3
		40 ppm
	TWA	25 mg/m3
		10 ppm
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0,005 ppm
	TWA	0,002 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,02 mg/m3	
	TWA	0,02 mg/m3	
Dipropylene Glycol (CAS 25265-71-8)	STEL	280 mg/m3	Inhalable dust.
	TWA	140 mg/m3	Inhalable dust.
Ethylene glycol (CAS 107-21-1)	STEL	52 mg/m3	
		20 ppm	
	TWA	26 mg/m3	
		10 ppm	
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,02 mg/m3	
	TWA	0,02 mg/m3	

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	STEL	0,07 mg/m3	
	TWA	0,02 mg/m3	
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3	Vapour.
		40 ppm	Vapour.
	TWA	52 mg/m3	Vapour.
		10 mg/m3	Particulate.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
		20 ppm	Vapour.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	STEL	0,07 mg/m3	
	TWA	0,02 mg/m3	

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	STEL	104 mg/m3
		40 ppm
	TWA	52 mg/m3
		20 ppm

Biological limit values

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling Time
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	10 µg/g	4,4'-Diaminodip henylmethan	Creatinine in urine	*
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	10 µg/g	4,4'-Diaminodip henylmethan	Creatinine in urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines

EU Exposure Limit Values: Skin designation

Ethylene glycol (CAS 107-21-1) Can be absorbed through the skin.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Ethylene glycol (CAS 107-21-1) Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection Wear appropriate chemical resistant gloves.

- Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures	Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
Environmental exposure controls	Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Colour	Yellow.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	25 Durometer/Shore A
Solubility(ies)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials. Moisture.
10.5. Incompatible materials	Acids. Alcohols. Alkalines. Amines. Strong bases. Strong oxidising agents. Substances that react with isocyanates.
10.6. Hazardous decomposition products	Carbon oxides. Hydrogen cyanide. Isocyanates. Nitrogen oxides.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.

Ingestion May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Coughing. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

11.1. Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	Species	Test Results
Diphenylmethane-4-4'-diisocyanante (MDI) (CAS 101-68-8)		
Acute		
Oral		
LD50	Mouse	2200 mg/kg
Ethylene glycol (CAS 107-21-1)		
Acute		
Dermal		
LD50	Rabbit	9530 mg/kg
Triethylendiamine (CAS 280-57-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	700 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

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

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Diphenylmethane-4-4'-diisocyanante (MDI) (CAS 101-68-8)	3 Not classifiable as to carcinogenicity to humans.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure May cause damage to organs (Inhalation, Kidneys) through prolonged or repeated exposure.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Mixture versus substance information No information available.

Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

Components		Species	Test Results
Ethylene glycol (CAS 107-21-1)			
Aquatic			
Acute			
Crustacea	EC50	Ceriodaphnia dubia	10000 mg/l, 48 Hours
Fish	LC50	Oncorhynchus mykiss	24591 mg/l, 96 Hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	3469 mg/l, 7 days
Fish	NOEC	Oncorhynchus mykiss	14692 mg/l, 12 days

Components		Species	Test Results
Triethylendiamine (CAS 280-57-9)			
Acute			
	EC50	Selenastrum capricornutum (new Pseudokirchneriella subcapita	110 mg/l, 72 hours
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 hours
Fish	LC50	Carp (Cyprinus carpio)	> 100 mg/l, 96 hours

12.2. Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Ethylene glycol (CAS 107-21-1)	-1,36
Triethyl phosphate (CAS 78-40-0)	0,8

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil The product is insoluble in water.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 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 regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Diphenylmethane-4-4'-diisocyanante (MDI) (CAS 101-68-8)
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations	The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended. According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.
National regulations	Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any H-statements not written out in full under Sections 2 to 15	H228 Flammable solid. H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. 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 by ingestion. H373 May cause damage to organs through prolonged or repeated exposure by inhalation. H373 May cause damage to organs through prolonged or repeated exposure.
Training information	Follow training instructions when handling this material.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.