SAFETY DATA SHEET

1. Identification

Product identifier	**Back Up Pads**
Other means of identification	None.
Recommended use	Sanding, polishing various surfaces.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

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

2. Hazard identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity following repeated exposure	Category 2 (Inhalation, Kidneys)
Environmental hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs (Inhalation, Kidneys) through prolonged or repeated exposure.

Precautionary statements

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.

Response	IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTRE/doctor if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTRE/doctor. Take off contaminated clothing and wash it before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Diphenylmethane-4-4'-diisocyanante (MDI)	101-68-8	>=25.0 - < 50.0
Ethylene glycol	107-21-1	>= 3.0 - < 7.0
Dipropylene Glycol	25265-71-8	>=1.0 - < 3.0
Methylene bis(isocyanatobenzene) homopolymer	39310-05-9	>=1.0 - < 3.0
Methylenediphenyl diisocyanate (MDI)	26447-40-5	>=1.0 - < 3.0
Triethyl phosphate	78-40-0	>=1.0 - < 3.0
Triethylendiamine	280-57-9	>= 0.3 - < 1.0
Other components below reportable levels		41.1

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.

4. 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.
Most important symptoms/effects, 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.
Indication of 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.
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.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Carbon dioxide (CO2).

Unsuitable extinguishing media	Water.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions 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.
Fire fighting equipment/instructions	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.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	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.
Methods and materials 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.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

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.
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).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

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	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0.05 mg/m3
		0.005 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0.05 mg/m3
		0.005 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0.01 ppm	
	TWA	0.005 ppm	
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol
		50 ppm	Vapour.
	STEL	20 mg/m3	Particulate.
	TWA	10 mg/m3	Particulate.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0.01 ppm	
	TWA	0.005 ppm	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

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	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	Ceiling	0.02 ppm	
	TWA	0.005 ppm	
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Ceiling	0.02 ppm	
	TWA	0.005 ppm	
Triethylendiamine (CAS 280-57-9)	TWA	4.6 mg/m3	
		1 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Diphenylmethane-4-4'-diiso cyanante (MDI) (CAS 101-68-8)	TWA	0.051 mg/m3	
		0.005 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	Ceiling	127 mg/m3	Vapor and mist.
		50 ppm	Vapor and mist.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	TWA	0.051 mg/m3	
		0.005 ppm	

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value	Form
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Canada - British Columbia OELs: Skin designation

Diphenylmethane-4-4'-diisocyanante (MDI) (CAS 101-68-8)	Can be absorbed through the skin.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Triethylendiamine (CAS 280-57-9)	Can be absorbed through the skin.

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

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.

General hygiene considerations 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.

9. 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.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	25 Durometer/Shore A
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

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

11. Toxicological information

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	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	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.

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

Components	Species	Test Results
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 or skin sensitisation

Canada - Alberta OELs: Irritant

Ethylene glycol (CAS 107-21-1)	Irritant

Canada - British Columbia OELs: Respiratory or skin sensitiser

Diphenylmethane-4-4'-diisocyanante (MDI) (CAS 101-68-8)	Capable of causing respiratory, dermal or conjunctival sensitization.
Methylenediphenyl diisocyanate (MDI) (CAS 26447-40-5)	Capable of causing respiratory, dermal or conjunctival sensitization.

Canada - Quebec OELs: Sensitizer

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

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

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

ACGIH Carcinogens

Ethylene glycol (CAS 107-21-1)	A4 Not classifiable as a human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Ethylene glycol (CAS 107-21-1)	Not classifiable as a human carcinogen.

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 This product is not expected to cause reproductive or developmental effects.

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 Not an aspiration hazard.

Chronic effects May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

12. Ecological information

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.

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
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

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

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

Mobility in soil The product is insoluble in water.

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.

13. Disposal considerations

Disposal instructions 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.

Local disposal regulations Dispose in accordance with all applicable regulations.

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

Waste from residues / unused products 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.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	27-August-2018
Revision date	-
Version No.	01
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.