Safety Data Sheet

Issue Date 30-Aug-2023 **Revision Date** 18-Aug-2023 **Revision Number** 11

1. IDENTIFICATION

Product identifier

Product Code 1081-00WHA
Product Name ENDURA-SHIELD WB TNEMEC WHITE

Other means of identification

Common Name SERIES 1081, PART A
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use industrial paint.
Uses advised against Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet

Manufacturer Address
Tnemec Company, Inc. 123 W. 23rd Avenue, North Kansas City, MO 64116-3094 (816) 474-3400

Distributor
Tnemec Company, Inc. 86 Boul, des Entreprises, Ste. 203, Boisbriand, Quebec Canada J7G 2T3

Emergency telephone number

Company Phone Number Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number 800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitization	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Flammable Liquids	Category 3

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
May cause an allergic skin reaction
May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure

Flammable liquid and vapor

Appearance opaque **Physical state** liquid **Odor** Slight

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Contaminated work clothing should not be allowed out of the workplace
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Use explosion-proof electrical/ventilating/lighting/.?/equipment
Keep cool

Response
IF exposed or concerned: Get medical advice/attention
Specific treatment (see .? on this label)
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
In case of fire: Use CO2, dry chemical, or foam for extinction

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Keep away from children

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
If product is in liquid or paste form, physical or health hazards listed related to dust are not considered significant. However, product may contain substances that could be potential hazards if caused to become airborne due to grinding, sanding or other abrasive processes.
Other information
May be harmful in contact with skin
Causes mild skin irritation
Harmful to aquatic life
Harmful to aquatic life with long lasting effects
Cancer hazard. Contains crystalline silica which can cause cancer. (Risk of cancer depends on duration and level of exposure).
Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs
Contains ethylene glycol monobutyl ether which may cause blood damage based on animal data.

SEE SAFETY DATA SHEET
Acute Toxicity 41.6679 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
TITANIUM DIOXIDE (TOTAL DUST)	13463-67-7	10 - <30%
CRYSTALLINE SILICA (QUARTZ)	14808-60-7	10 - <30%
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	1 - <10%
AMORPHOUS SILICA	7631-86-9	1 - <10%
AMORPHOUS SILICA	7631-86-9	1 - <10%
AROMATIC PETROLEUM DISTILLATE	64742-95-6	1 - <10%
BIS (PENTAMETHYLPIPERIDYL) SEBACATE	41556-26-7	0.1 - <1%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes. If eye irritation persists, consult a specialist.

Skin contact Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. Oxygen or artificial respiration if needed.

Ingestion If swallowed, do not induce vomiting. Get medical attention immediately.

Self-protection of the first aider Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide. Foam. Dry chemical.

Unsuitable extinguishing media Water.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapours In the event of fire and/or explosion do not breathe fumes

Hazardous combustion products Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon oxides. Nitrogen oxides (NOx). Hydrocarbons.

Protective equipment and precautions for firefighters
Use water spray to cool unopened containers. In the event of fire, wear self-contained breathing apparatus. Keep away from heat/sparks/open flames/hot surfaces. MAY CAUSE HEAT AND PRESSURE BUILD-UP IN CLOSED CONTAINERS. Solvent

vapors are heavier than air and may spread along floors. Flash back possible over considerable distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes, skin and clothing. Use personal protective equipment. Remove all sources of ignition.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment Remove all sources of ignition. Spills may be collected with inert, absorbent material for proper disposal. Use non-sparking tools, protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable containers for proper disposal.

Methods for cleaning up If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with eyes, skin and clothing. Remove and wash contaminated clothing before re-use. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapours or spray mist. Do not smoke. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not ingest. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible products Strong oxidizing agents. Acids. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	TWA: 0.2 mg/m³ nanoscale respirable particulate matter TWA: 2.5 mg/m³ finescale respirable particulate matter	TWA: 15 mg/m³ total dust	5000 mg/m³
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³	50 mg/m³ respirable dust
ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m³ Skin	700 ppm
AMORPHOUS SILICA	-	-	3000 mg/m³

7631-86-9			
AMORPHOUS SILICA 7631-86-9	-	-	3000 mg/m^3

Appropriate engineering controls

Engineering measures Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH"s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Use chemical resistant splash type goggles. If splashes are likely to occur, wear face-shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection Use only with adequate ventilation. Do not breathe vapors, spray mist, or dust. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist or dust levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application. Follow respirator manufacturer's directions for respirator use.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.
Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	opaque	**Odor**	Slight
Color	No information available	**Odor threshold**	No information available

Property	**Values**	**Remarks**
pH		No data available
Melting point / freezing point	0 °C / 32 °F	freezing point
Boiling point / boiling range	100 °C / 212.0 °F	
Flash point	52 °C / 125.0 °F	Pensky Martens - Closed Cup
Evaporation rate		No data available
Flammability (solid, gas)	No data available	No information available
Flammability Limit in Air		No data available
Upper flammability limit	N/A	
Lower flammability limit	1.1	
Vapor pressure		No data available
Vapor density		No data available
Specific gravity	1.56018	g/cm3
Water solubility	Insoluble in cold water	
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition temperature	No data available	No data available
Decomposition temperature	No information available	No data available
Kinematic viscosity	No information available	No data available
Dynamic viscosity	1900 centipoises	approx

Other Information

Molecular weight	No information available
Density	13.01186 lbs/gal

Volatile organic compounds (VOC) content	1.03508 lbs/gal
Total volatiles weight percent	30.9637 %
Total volatiles volume percent	49.2953 %
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
Strong oxidizing agents, Acids, Bases

Hazardous decomposition products
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon oxides. Hydrocarbons. Oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Eye contact Causes serious eye irritation.

Skin contact Irritating to skin. May cause sensitization by skin contact.

Ingestion Harmful if swallowed.

Information on toxicological effects

Symptoms Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Skin disorders. Irritating to eyes and skin.

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

Chronic Toxicity Cancer hazard. Contains crystalline silica which can cause cancer. (Risk of cancer depends on duration and level of exposure). Contains ethylene glycol monobutyl ether which may cause blood damage based on animal data.

Sensitization May cause sensitization of susceptible persons.

Mutagenicity May cause genetic defects.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	A3	Group 2B	-	X
CRYSTALLINE SILICA	A2	Group 1	Known	X

(QUARTZ) 14808-60-7				
ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2	A3	Group 3	-	
AMORPHOUS SILICA 7631-86-9		Group 3	Known	
AMORPHOUS SILICA 7631-86-9		Group 3	Known	

Reproductive effects Suspected of damaging fertility or the unborn child.
STOT - single exposure Causes damage to organs
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure
Target organ effects blood, Central nervous system, Eyes, hematopoietic system, kidney, liver, respiratory system, Skin.
Aspiration hazard No information available.

Acute Toxicity 41.6679 % of the mixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2	-	LC50: 1490 mg/L Lepomis macrochirus 96 h static LC50: 2950 mg/L Lepomis macrochirus 96 h	EC50: >1000 mg/L Daphnia magna 48 h
AMORPHOUS SILICA 7631-86-9	EC50: 440 mg/L Pseudokirchneriella subcapitata 72 h	LC50: 5000 mg/L Brachydanio rerio 96 h static	EC50: 7600 mg/L Ceriodaphnia dubia 48 h
AMORPHOUS SILICA 7631-86-9	EC50: 440 mg/L Pseudokirchneriella subcapitata 72 h	LC50: 5000 mg/L Brachydanio rerio 96 h static	EC50: 7600 mg/L Ceriodaphnia dubia 48 h
AROMATIC PETROLEUM DISTILLATE 64742-95-6	-	LC50: 9.22 mg/L Oncorhynchus mykiss 96 h	EC50: 6.14 mg/L Daphnia magna 48 h
BIS (PENTAMETHYLPIPERIDYL) SEBACATE 41556-26-7	-	LC50: 0.97 mg/L Lepomis macrochirus 96 h static	-

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility in Environmental Media

Chemical name	log Pow
ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2	0.81
BIS (PENTAMETHYLPIPERIDYL) SEBACATE 41556-26-7	0.37

Other Adverse Effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods Keep container tightly closed. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

US EPA Waste Number

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
XYLENE 1330-20-7		Included in waste stream: F039		U239
ACETONE 67-64-1		Included in waste stream: F039		U002
TOLUENE 108-88-3	U220	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151		U220
1,4 DIOXANE 123-91-1	U108	Included in waste stream: F039		U108

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name paint,water base freezable

Additional Information Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does Not Comply
ENCS	Does Not Comply
IECSC	Complies
KECL	Does Not Comply
PICCS	Does Not Comply
AICS	Does Not Comply

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Chemical name	HAPS Data
ETHYLENE GLYCOL MONOBUTYL ETHER	

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

Chemical name	SARA 313 - Threshold Values
ETHYLENE GLYCOL MONOBUTYL ETHER - 111-76-2	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Chemical name	TSCA 5(a)2
2-METHYL-4-ISOTHIAZOLIN-3-1	62 FR 34421, Jun 26, 1997 proposed rule PMN P-95-0117 62 FR 34421, Jun 26, 1997 proposed rule PMN P-96-1251

California Prop. 65

WARNING: This product can expose you to the following chemicals which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Chemical name	California Prop. 65
TITANIUM DIOXIDE (TOTAL DUST) - 13463-67-7	Carcinogen
CRYSTALLINE SILICA (QUARTZ) - 14808-60-7	Carcinogen
AMORPHOUS SILICA - 7631-86-9	Carcinogen
AMORPHOUS SILICA - 7631-86-9	Carcinogen
CRYSTILLINE SILICA - 14808-60-7	Carcinogen
CARBON BLACK DUST & FUME - 1333-86-4	Carcinogen
TOLUENE - 108-88-3	Developmental
1,4 DIOXANE - 123-91-1	Carcinogen

California SCAQMD Rule 443
Contains Photochemically Reactive Solvent

State Right-to-Know

Chemical name	New Jersey	Massachusetts	Pennsylvania
TITANIUM DIOXIDE (TOTAL DUST) 13463-67-7	X	X	X
CRYSTALLINE SILICA (QUARTZ) 14808-60-7	X	X	X
ETHYLENE GLYCOL MONOBUTYL ETHER 111-76-2	X	X	X
AMORPHOUS SILICA 7631-86-9		X	X
AMORPHOUS SILICA 7631-86-9		X	X

16. OTHER INFORMATION

NFPA	**Health** 2	**Flammability** 1	**Instability** 1	**Physical hazard** *
HMIS (Hazardous Material Information System)	**Health** 2*	**Flammability** 1	**Reactivity** 1	

Prepared By Tnemec Regulatory Dept: 816-474-3400
Revision Date 18-Aug-2023
Revision Summary

9 4 5 7 10 8 11 14 1 13

Disclaimer

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.

To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

End of SDS

Safety Data Sheet

Issue Date 28-Aug-2023 **Revision Date** 18-Aug-2023 **Revision Number** 15

1. IDENTIFICATION

Product identifier

Product Code 1080-1081B
Product Name ENDURA-SHIELD WB ISO

Other means of identification

Common Name SERIES /2E74/1080/1081, PART B
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use industrial paint.
Uses advised against Consumer use, For professional use only. Not for residential use.

Details of the supplier of the safety data sheet

Manufacturer Address
Tnemec Company, Inc. 123 W. 23rd Avenue, North Kansas City, MO 64116-3094 (816) 474-3400

Distributor
Tnemec Company, Inc. 86 Boul, des Entreprises, Ste. 203, Boisbriand, Quebec Canada J7G 2T3

Emergency telephone number

Company Phone Number Tnemec Regulatory Dept: 816-474-3400
24 Hour Emergency Phone Number 800-535-5053 (Infotrac)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2A
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

EMERGENCY OVERVIEW

Danger

Hazard statements
Harmful if inhaled
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
May cause respiratory irritation. May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure

Appearance clear **Physical state** liquid **Odor** odorless

Precautionary Statements
Prevention
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray

Response
Specific treatment (see .? on this label)
Get medical advice/attention if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Keep away from children

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other information
SEE SAFETY DATA SHEET
Acute Toxicity 80 % of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
HEXAMETHYLENE DIISOCYANATE (HDI) POLYMER	28182-81-2	60 - 100%
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	822-06-0	0.1 - <1%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting. Get medical attention immediately.

Self-protection of the first aider Use personal protective equipment. Avoid contact with eyes, skin and clothing.

Most important symptoms and effects, both acute and delayed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical. Carbon dioxide. Foam.

Unsuitable extinguishing media Water.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapours In the event of fire and/or explosion do not breathe fumes

Hazardous combustion products Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon dioxide. Nitrogen oxides (NOx). Hydrogen cyanide. Isocyanates.

Protective equipment and precautions for firefighters
Use water spray to cool unopened containers. In the event of fire, wear self-contained breathing apparatus. Keep away from heat/sparks/open flames/hot surfaces. MAY CAUSE HEAT AND PRESSURE BUILD-UP IN CLOSED CONTAINERS.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes, skin and clothing. Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation.

Environmental Precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment Remove all sources of ignition. Spills may be collected with inert, absorbent material for proper disposal. Use non-sparking tools, protective gloves, goggles and clothing, adequate ventilation, avoid the breathing of vapors and use respiratory protective devices. Transfer absorbent material to suitable containers for proper disposal.

Methods for cleaning up If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling **Use only with adequate ventilation.**. Avoid contact with eyes, skin and clothing. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. When used in a mixture, read the labels and safety data sheets of all components. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible products Amines. Water. Strong bases. Alcohols. copper.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER 822-06-0	TWA: 0.005 ppm	-	

Appropriate engineering controls

Engineering measures Sufficient ventilation, in volume and pattern, should be provided through both local and general exhaust to keep the air contaminant concentration below current applicable OSHA Permissible Exposure Limits (PEL) and ACGIH"s Threshold Limit Values (TLV). Appropriate ventilation should be employed to remove hazardous decomposition products formed during welding or flame cutting operations of surfaces coated with this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side-shields

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection INDIVIDUALS WITH LUNG OR BREATHING PROBLEMS OR PRIOR REACTION TO ISOCYANATES MUST NOT BE EXPOSED TO VAPOR OR SPRAY MIST. Do not breathe vapor or spray mist. Wear an appropriate, properly fitted respirator (NIOSH/MSHA approved) during and after application unless air monitoring demonstrates vapor/mist levels are below applicable limits. An airline respirator (TC 19C NIOSH/MSHA) is recommended. A vapor-particulate respirator (TC 23C NIOSH/MSHA) may be appropriate where air monitoring demonstrates vapors are less than ten times the applicable exposure limits and the isocyanate concentration is less than its applicable exposure limit. The use of an air-supplied respirator is mandatory whenever the airborne concentration of isocyanate monomer is unknown.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.
Avoid breathing dust created by cutting, sanding, or grinding.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	clear	**Odor**	odorless
Color	No information available	**Odor threshold**	No information available

Property	**Values**	**Remarks**
pH		No data available
Melting point / freezing point	No data available	Literary Reference
Boiling point / boiling range	72 °C / 162 °F	
Flash point	No information available	
Evaporation rate		No data available
Flammability (solid, gas)	No data available	No information available
Flammability Limit in Air		No data available
Upper flammability limit	N/A	
Lower flammability limit	N/A	
Vapor pressure		No data available
Vapor density		No data available
Specific gravity	1.15828	g/cm3
Water solubility	Insoluble in cold water	
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition temperature	No data available	No data available
Decomposition temperature	No information available	No data available
Kinematic viscosity	No information available	No data available
Dynamic viscosity		No data available

Other Information

Molecular weight	No information available
Density	9.66006 lbs/gal
Volatile organic compounds (VOC) content	0 lbs/gal
Total volatiles weight percent	0 %
Total volatiles volume percent	0 %
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity
May occur if in contact with moisture, other materials which react with isocyanates, or temperatures above 400 F

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
Amines, Water, Strong bases, Alcohols, copper

Hazardous decomposition products
Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds. Carbon dioxide. Nitrogen oxides (NOx). Isocyanates. Hydrogen cyanide.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation May cause sensitization of susceptible persons. Contains isocyanate monomer. If subject to spray application, engineering and administrative controls must be instituted to maintain an exposure level below .005ppm. If these controls are not adequate, the use of an air-supplied respirator is mandatory.

Eye contact Severely irritating to eyes.

Skin contact May cause sensitization of susceptible persons.

Ingestion Harmful if swallowed.

Information on toxicological effects

Symptoms Skin disorders. Respiratory disorders.

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

Chronic Toxicity Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause sensitization by inhalation and skin contact. Contains isocyanate monomer. If subject to spray application, engineering and administrative controls must be instituted to maintain an exposure level below .005ppm. If these controls are not adequate, the use of an air-supplied respirator is mandatory. Causes damage to organs through prolonged or repeated exposure.

Sensitization May cause sensitization of susceptible persons.
Mutagenicity No information available.
Carcinogenicity There are no known carcinogenic chemicals in this product.
Reproductive effects No information available.
STOT - single exposure Causes damage to organs
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure
Target organ effects respiratory system, Skin.
Aspiration hazard No information available.

Acute Toxicity 80 % of the mixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER 822-06-0	-	LC50: 26.1 mg/L Brachydanio rerio 96 h static	-

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility in Environmental Media

Other Adverse Effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Methods Keep container tightly closed. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name PAINT & RELATED MATERIAL NOT REGULATED

IATA
Proper Shipping Name NOT REGULATED

IMDG/IMO
Proper Shipping Name PAINT & RELATED MATERIAL, NOT REGULATED
Marine Pollutant No

Additional Information Call TNEMEC Traffic Department - 816-474-3400 for additional information or other modes of Transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Does Not Comply
EINECS/ELINCS	Does Not Comply
ENCS	Does Not Comply
IECSC	Complies
KECL	Does Not Comply
PICCS	Does Not Comply
AICS	Does Not Comply

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Chemical name	**HAPS Data**
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

Chemical name	SARA 313 - Threshold Values
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER - 822-06-0	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Chemical name	Hazardous Substances RQs	CERCLA EHS RQs	RQ
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER 822-06-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

California Prop. 65

WARNING: None of the ingredients are listed with California Proposition 65.

California SCAQMD Rule 443
Contains Photochemically Reactive Solvent

State Right-to-Know

Chemical name	New Jersey	Massachusetts	Pennsylvania
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER 822-06-0	X	X	

16. OTHER INFORMATION

NFPA	**Health** 2	**Flammability** 0	**Instability** 1	**Physical hazard** *
HMIS (Hazardous Material Information System)	**Health** 2*	**Flammability** 0	**Reactivity** 1	

Prepared By Tnemec Regulatory Dept: 816-474-3400
Revision Date 18-Aug-2023
Revision Summary
9 4 5 6 7 10 8 11 14 15 1

Disclaimer

For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.
To the best of our knowledge, the information contained herein is accurate. However, neither the Tnemec Company or any of its subsidiaries assume any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

End of SDS