



Material Safety Data Sheet

Print Date 10-Jun-2011

Revision Date 10-Jun-2011

Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Common name	SERIES 1072V PART A
Product code	1072V-33GRA
Trade name	FLUORONAR GRAY-ANSI 61
Product Class	FLUOROPOLYMER PAINT
Manufacturer	Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372
Emergency telephone	800-535-5053 (INFOTRAC) - TNE MEC REGULATORY DEPT: 816-474-3400

2. HAZARDS IDENTIFICATION

Emergency Overview

DANGER!

FLAMMABLE LIQUID AND VAPOR.
HARMFUL OR FATAL IF SWALLOWED.
HARMFUL IF INHALED.
MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.
MAY CAUSE EYE, SKIN, NOSE, THROAT AND RESPIRATORY TRACT IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

Potential health effects

Principle Routes of Exposure Eye contact, Inhalation, Skin contact.

Acute effects

Eyes	Moderately irritating to the eyes.
Skin	Irritating to skin.
Inhalation	Irritating to respiratory system.
Ingestion	May be harmful if swallowed.

Chronic effects

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system. Skin disorders. Kidney disorders. Liver disorders. Respiratory disorders.

Interactive effects Use of alcoholic beverages may enhance toxic effects.

Potential environmental effects See Section 12 for additional Ecological Information

Target Organ Effects Central nervous system, Eyes, Lungs, Respiratory system, Skin, Kidney, Liver

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components

Component	CAS-No	Weight %
FLUOROPOLYMER	88795-12-4	10 - 30
P-CHLOROBENZOTRIFLUORIDE	98-56-6	10 - 30
TITANIUM DIOXIDE (TOTAL DUST)	13463-67-7	10 - 30
tert-BUTYL ACETATE	540-88-5	5 - 10
BARIUM SULFATE (TOTAL DUST)	7727-43-7	5 - 10
AMORPHOUS SILICA	7631-86-9	1 - 5
COPPER CHROMITE BLACK SPINEL	68186-91-4	1 - 5
ETHYL 3-ETHOXYPROPIONATE	763-69-9	1 - 5
AMORPHOUS SILICA	7631-86-9	1 - 5
ALUMINUM OXIDES	1344-28-1	1 - 5
IRON OXIDE FUME	1309-37-1	0.1 - 1
XYLENE	1330-20-7	0.1 - 1

4. FIRST AID MEASURES

Eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes.
Skin contact:	Wash off immediately with soap and plenty of water.
Ingestion:	If swallowed, do not induce vomiting. Get medical attention immediately.
Inhalation:	Move to fresh air. Oxygen or artificial respiration if needed.

5. FIRE-FIGHTING MEASURES

Flammable properties	Flammable.
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Contact with water may cause violent frothing. Use: Carbon dioxide (CO ₂) - Foam - Dry chemical
Hazardous decomposition products	Oxides of carbon, hydrocarbons. Oxides of nitrogen. Chlorine. Fluorine.
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.
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	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

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.

Other information Not applicable

7. HANDLING AND STORAGE

Handling

Close container after each use. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. If splashes are likely to occur, wear goggles. Wear protective gloves/clothing. Do not burn, or use a cutting torch on, the empty drum. When used in a mixture, read the labels and safety data sheets of all components. Wash thoroughly after handling.

Storage

Keep away from heat, sparks and flame. VAPORS MAY CAUSE FLASH FIRE. Use only in an area containing flame proof equipment. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross ventilation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	Quebec TWAEV	Ontario TWAEV	Mexico OEL (TWA)
P-CHLOROBENZOTRIFLUORIDE	TWA: 2.5 mg/m ³		TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	
TITANIUM DIOXIDE (TOTAL DUST)	: 10 mg/m ³ TWA	: 10 mg/m ³ TWA (total dust) : 15 mg/m ³ TWA (total dust)	TWA: 10 mg/m ³ TWAEV (total dust, containing no asbestos and less than 1% crystalline silica)	TWA: 10 mg/m ³ TWA (total dust)	: 10 mg/m ³ TWA (as Ti) : 20 mg/m ³ STEL (as Ti)
tert-BUTYL ACETATE	: 200 ppm TWA	: 200 ppm TWA; 950 mg/m ³ TWA	TWA: 200 ppm TWAEV; 950 mg/m ³ TWAEV	TWA: 200 ppm TWA	: 200 ppm TWA; 950 mg/m ³ TWA; 250 ppm STEL; 1190 mg/m ³ STEL
BARIUM SULFATE (TOTAL DUST)	: 10 mg/m ³ TWA : 0.5 mg/m ³ TWA (as Ba)	: 10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction) : 15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)	TWA: 10 ppm TWAEV (total dust, containing no asbestos and less than 1% crystalline silica); 5 ppm TWAEV (respirable dust, containing no asbestos and less than 1% crystalline silica) TWA: 0.5 mg/m ³ TWAEV (as Ba)	TWA: 10 mg/m ³ TWA (total dust) TWA: 0.5 mg/m ³ TWA (as Ba)	TWA: 0.5 mg/m ³
COPPER CHROMITE BLACK SPINEL	TWA: 0.5 mg/m ³		TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³
ETHYL 3-ETHOXYPROPIONATE				TWA: 50 ppm TWA; 300 mg/m ³ TWA	
ALUMINUM OXIDES	TWA: 1 mg/m ³	: 10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction) : 15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)	TWA: 10 mg/m ³ TWAEV (total dust, containing no asbestos and less than 1% crystalline silica, as Al)	TWA: 10 mg/m ³	: 10 mg/m ³ TWA
IRON OXIDE FUME	: 5 mg/m ³ TWA (respirable fraction)	: 10 mg/m ³ TWA (fume)	TWA: 5 mg/m ³ TWAEV (dust and fume, as Fe)	TWA: 5 mg/m ³ TWA (respirable)	: 5 mg/m ³ TWA : 10 mg/m ³ STEL (as Fe)
XYLENE	: 100 ppm TWA : 150 ppm STEL	: 100 ppm TWA; 435 mg/m ³ TWA : 150 ppm STEL; 655 mg/m ³ STEL	TWA: 100 ppm TWAEV; 434 mg/m ³ TWAEV STEL: 150 ppm STEV; 651 mg/m ³ STEV	TWA: 100 ppm TWA STEL: 150 ppm STEL	: 100 ppm TWA; 435 mg/m ³ TWA : 150 ppm STEL; 655 mg/m ³ STEL

Engineering measures Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Skin protection

Eye/face protection

Respiratory protection

Lightweight protective clothing, Apron, Impervious gloves
If splashes are likely to occur, wear Goggles.

Use only with adequate ventilation. Do not breathe dust, vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH 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

Flash point	27°C / 81.0°F
Boiling range	98 - 165°C / 208.0 - 329.0°F
Upper explosion limit	No information available
Lower explosion limit	No information available
Evaporation rate	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.50006 g/cm ³
Density	12.48275 lbs/gal
Volatile organic compounds (VOC) content	.964 lbs/gal
Volatile by weight	39.9390 %
Volatile by volume	52.1244 %

10. STABILITY AND REACTIVITY

Chemical stability	Stable.	Conditions to avoid	Heat, flames and sparks. Reacts with air to form peroxides.
Incompatible products	Strong oxidizing agents. Acids. Caustics. Bases. Alkalines.	Possibility of hazardous reactions	None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
P-CHLOROBENZOTRIFLUORIDE	13 g/kg (Rat)	2 mg/kg (Rabbit)	33 mg/L (Rat) 4 h
TITANIUM DIOXIDE (TOTAL DUST)	10000 mg/kg (Rat)		
tert-BUTYL ACETATE	4100 mg/kg (Rat)	2 g/kg (Rabbit)	2230 mg/m ³ (Rat) 4 h
AMORPHOUS SILICA	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	2.2 mg/L (Rat) 1 h
ETHYL 3-ETHOXYPROPIONATE	3200 mg/kg (Rat)	10 mL/kg (Rabbit)	
AMORPHOUS SILICA	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	2.2 mg/L (Rat) 1 h
ALUMINUM OXIDES	5000 mg/kg (Rat)		
IRON OXIDE FUME	10000 mg/kg (Rat)		
XYLENE	4300 mg/kg (Rat)	1700 mg/kg (Rabbit)	5000 ppm (Rat) 4 h 47635 mg/L (Rat) 4 h

Irritation	No information available
Corrosivity	No information available
Sensitization	No information available

Chronic toxicity**Carcinogenicity**

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
TITANIUM DIOXIDE (TOTAL DUST)		Group 2B		X	

Mutagenicity

No information available

Reproductive effects

No information available

Developmental effects

No information available

Teratogenicity

No information available

Target Organ Effects

Central nervous system, Eyes, Lungs, Respiratory system, Skin, Kidney, Liver.

Endocrine Disruptor Information

No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia
P- CHLOROBENZOTRIFLUORIDE			EC50 = 11.1 mg/L 5 min EC50 = 13.4 mg/L 15 min EC50 = 14.3 mg/L 30 min	EC50 = 3.68 mg/L 48 h
tert-BUTYL ACETATE		LC50 296-362 mg/L Pimephales promelas 96 h	EC50 = 6.38 mg/L 5 min EC50 = 8.04 mg/L 15 min EC50 = 11.1 mg/L 30 min	
AMORPHOUS SILICA	EC50 = 440 mg/L 72 h	LC50= 5000 mg/L Brachydanio rerio 96 h		EC50 = 7600 mg/L 48 h
ETHYL 3- ETHOXYPROPIONATE		LC50= 62 mg/L Pimephales promelas 96 h		EC50 = 970 mg/L 48 h
AMORPHOUS SILICA	EC50 = 440 mg/L 72 h	LC50= 5000 mg/L Brachydanio rerio 96 h		EC50 = 7600 mg/L 48 h
XYLENE		LC50= 13.4 mg/L Pimephales promelas 96 h LC50 2.661-4.093 mg/L Oncorhynchus mykiss 96 h LC50 13.5-17.3 mg/L Oncorhynchus mykiss 96 h LC50 13.1-16.5 mg/L Lepomis macrochirus 96 h LC50= 19 mg/L Lepomis macrochirus 96 h LC50 7.711-9.591 mg/L Lepomis macrochirus 96 h LC50 23.53-29.97 mg/L Pimephales promelas 96 h LC50= 780 mg/L Cyprinus carpio 96 h LC50> 780 mg/L Cyprinus carpio 96 h LC50 30.26-40.75 mg/L Poecilia reticulata 96 h	EC50 = 0.0084 mg/L 24 h	EC50 = 3.82 mg/L 48 h LC50 = 0.6 mg/L 48 h

13. DISPOSAL CONSIDERATIONS

13. DISPOSAL CONSIDERATIONS

Waste 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 for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

DOT Ground Transportation Only. Call TNEMEC Traffic Department - 816-474-3400 for other modes of Transportation.

Proper shipping name UN1263,PAINT,3,PGIII,ERG 128

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Does not Comply
CHINA Complies
ENCS Does not Comply
KECL Does not Comply
PICCS Does not Comply
AICS Does not Comply

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

Component
 COPPER CHROMITE BLACK SPINEL
 XYLENE

United States of America Federal Regulations

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values
BARIUM SULFATE (TOTAL DUST)	7727-43-7	5 - 10	1.0
COPPER CHROMITE BLACK SPINEL	68186-91-4	1 - 5	0.1 1.0
ALUMINUM OXIDES	1344-28-1	1 - 5	1.0 % de minimis concentration (fibrous forms)
XYLENE	1330-20-7	0.1 - 1	1.0 % de minimis concentration

SARA 311/312 Hazardous Categorization

Chronic Health Hazard yes
Acute Health Hazard yes
Fire Hazard yes
Sudden Release of Pressure Hazard no
Reactive Hazard no

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
P-CHLOROBENZOTRIFLUORIDE		X		
tert-BUTYL ACETATE				X
COPPER CHROMITE BLACK SPINEL		X		

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE	100 lb RQ			X

CERCLA**United States of America State Regulations****California Prop. 65**

This product contains the following Proposition 65 chemicals:

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
P-CHLOROBENZOTRIFLUORIDE		X	X		X
TITANIUM DIOXIDE (TOTAL DUST)	X	X	X		X
tert-BUTYL ACETATE	X	X	X		X
BARIUM SULFATE (TOTAL DUST)	X	X	X		X
AMORPHOUS SILICA	X		X		
COPPER CHROMITE BLACK SPINEL		X	X	X	X
AMORPHOUS SILICA	X		X		
ALUMINUM OXIDES	X	X	X		X
IRON OXIDE FUME	X	X	X		X
XYLENE	X	X	X	X	X

Other international regulations**Canada**

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

WHMIS Classification

B2 Flammable liquid
D2A Very toxic materials



Component	NPRI
ALUMINUM OXIDES	Part 1, Group 1 Substance (fibrous form)
XYLENE	Part 1, Group 1 Substance; Part 5 Substance

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Revision Date 10-Jun-2011

Revision Note No information available

HMIS (Hazardous Material
Information System)

Health 2

Flammability 3

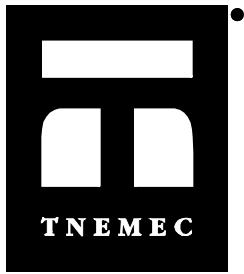
Reactivity 1

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 MSDS



Material Safety Data Sheet

Print Date 01-Jun-2011

Revision Date 01-Jun-2011

Revision Number 6

1. PRODUCT AND COMPANY IDENTIFICATION

Common name	SERIES V700 PART B
Product code	V700-1070B
Trade name	HYDROFLON CONVERTER
Product Class	ISOCYANATE
Manufacturer	Tnemec Company, Inc. 6800 Corporate Drive, Kansas City, MO 64120-1372
Emergency telephone	800-535-5053 (INFOTRAC) - TNE MEC REGULATORY DEPT: 816-474-3400

2. HAZARDS IDENTIFICATION

Emergency Overview

DANGER!

COMBUSTIBLE LIQUID AND VAPOR.
HARMFUL OR FATAL IF SWALLOWED.
HARMFUL IF INHALED.
MAY CAUSE LUNG INJURY.
MAY CAUSE ALLERGIC RESPIRATORY REACTION; EFFECTS MAY BE PERMANENT.
MAY CAUSE ALLERGIC SKIN REACTION; EFFECTS MAY BE PERMANENT.
MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.
MAY CAUSE EYE, SKIN, NOSE, THROAT AND RESPIRATORY TRACT IRRITATION.

Potential health effects

Principle Routes of Exposure Eye contact, Inhalation, Skin contact.

Acute effects

Eyes	Moderately irritating to the eyes. Risk of serious damage to eyes.
Skin	Irritating to skin. May cause sensitization by skin contact.
Inhalation	Irritating to respiratory system. May cause allergic respiratory reaction.
Ingestion	May be harmful if swallowed.

Chronic effects

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. 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.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system. Skin disorders. Respiratory disorders.

Interactive effects Use of alcoholic beverages may enhance toxic effects.

Potential environmental effects See Section 12 for additional Ecological Information

Target Organ Effects Central nervous system, Eyes, Lungs, Respiratory system, Skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components

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

4. FIRST AID MEASURES

Eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes.
Skin contact:	Wash off immediately with soap and plenty of water.
Ingestion:	If swallowed, do not induce vomiting. Get medical attention immediately.
Inhalation:	Move to fresh air. Oxygen or artificial respiration if needed.

5. FIRE-FIGHTING MEASURES

Flammable properties	Combustible material.
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Contact with water may cause violent frothing. Use: Carbon dioxide (CO ₂) - Foam - Dry chemical
Hazardous decomposition products	Oxides of carbon, hydrocarbons. Oxides of nitrogen. Hydrogen cyanide.

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.

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	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.
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.
Other information	Not applicable

7. HANDLING AND STORAGE

Handling

Close container after each use. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. If splashes are likely to occur, wear goggles. Wear protective gloves/clothing. Do not burn, or use a cutting torch on, the empty drum. When used in a mixture, read the labels and safety data sheets of all components. Wash thoroughly after handling. Ensure adequate ventilation.

Storage

Keep away from heat, sparks and flame. VAPORS MAY CAUSE FLASH FIRE. Use only in an area containing flame proof equipment. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross ventilation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	Quebec TWAEV	Ontario TWAEV	Mexico OEL (TWA)
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	: 0.005 ppm TWA		TWA: 0.005 ppm TWAEV; 0.034 mg/m ³ TWAEV	TWA: 0.005 ppm TWA (designated substance regulation, listed under Isocyanates, organic compounds); 0.005 ppm TWA (applies to workplaces to which the designated substance regulation does not apply) CEV: 0.02 ppm Ceiling (designated substances regulation)	

Engineering measures

Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Skin protection

Lightweight protective clothing, Apron, Impervious gloves

Eye/face protection

Safety glasses with side-shields

Respiratory protection

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

Flash point

38°C / 100.4°F

Boiling range

118 - 128°C / 244 - 262°F

Upper explosion limit

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Lower explosion limit	No information available
Evaporation rate	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.13187 g/cm ³
Density	9.41886 lbs/gal
Volatile organic compounds (VOC) content	.000 lbs/gal
Volatile by weight	.0000 %
Volatile by volume	.0000 %

10. STABILITY AND REACTIVITY

Chemical stability	Stable.	Conditions to avoid	Heat, flames and sparks. Amines.
Incompatible products	Strong oxidizing agents. Caustics. Water, alcohols, amines, strong bases, metal components, surface active materials.	Possibility of hazardous reactions	None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
HEXAMETHYLENE DIISOCYANATE (HDI) POLYMER			18500 mg/m ³ (Rat) 1 h
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	710 mg/kg (Rat)	570 mg/kg (Rabbit)	0.15 mg/L (Rat) 4 h 0.29 mg/L (Rat) 1 h

Irritation	No information available
Corrosivity	No information available
Sensitization	No information available

Chronic toxicity

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

Mutagenicity	No information available
Reproductive effects	No information available
Developmental effects	No information available
Teratogenicity	No information available
Target Organ Effects	Central nervous system, Eyes, Lungs, Respiratory system, Skin.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER		LC50= 26.1 mg/L Brachydanio rerio 96 h	EC50 = 53.2 mg/L 5 min EC50 = 25.5 mg/L 15 min EC50 = 15.7 mg/L 30 min	

13. DISPOSAL CONSIDERATIONS

Waste 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 for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

DOT Ground Transportation Only. Call TNEMEC Traffic Department - 816-474-3400 for other modes of Transportation.

Proper shipping name PAINT IN OIL

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL/NDSL Complies
 EINECS/ELINCS Complies
 CHINA Complies
 ENCS Does not Comply
 KECL Complies
 PICCS Complies
 AICS Complies

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

Component
 HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER

United States of America Federal Regulations

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	822-06-0	0.1 - 1	1.0 % de minimis concentration (listed under Chemical Category N120, Diisocyanates)

SARA 311/312 Hazardous Categorization

Chronic Health Hazard yes
 Acute Health Hazard yes
 Fire Hazard no
 Sudden Release of Pressure Hazard no
 Reactive Hazard no

CERCLA

United States of America State Regulations

California Prop. 65

This product contains the following Proposition 65 chemicals:

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
HEXAMETHYLENE DIISOCYANATE (HDI) MONOMER	X	X		X	

Other international regulations

Canada

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

WHMIS Classification

D2A Very toxic materials



Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Revision Date 01-Jun-2011

Revision Note No information available

HMIS (Hazardous Material Information System) Health 2 Flammability 2 Reactivity 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 or 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 MSDS