SAFETY DATA SHEETS (SDS)
Enviro Prime 789

Version: 2

Issued by: Envirosystems Technologies

Date of Issue: January 2017

Hazard Identifiers

SECTION 1 – IDENTIFICATION OF MATERIAL & SUPPLIER

Product Name: Enviro Prime 789
Manufacturer's Product Code: N/A
Recommended Use: Single Pack moisture cured primer
Company: Envirosystems Technologies
Address: 295 Princes Highway St Peters, NSW 2044.
Website: www.envirosystems.com.au
Telephone: +61 2 85958699 (business hours)
Emergency Telephone: Info Safe – 1800 638 556, Poisons Centre – 131126
Fax: +61 2 85958660
Other Information: All information in this SDS is to the best of our knowledge at time of publication. Users of this product should fully review this SDS prior to use to ensure best safety practices. Further information and or clarification can be obtained by contacting our technical department on the above telephone number.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Classified as **Hazardous** according to WHS Regulations, Australian GHS criteria and a **Dangerous Goods** according to the Australian Dangerous Goods Code.

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Class	Category
Flammable Liquids	3
Acute Toxicity, inhalation	4
Skin Corrosion/Irritation	2
Serious eye damage/eye irritation	2
Respiratory Sensitization	1
Specific target organ toxicity (single exposure)	2
Specific target organ toxicity (repeated exposure)	2
Hazardous to the aquatic environment- chronic	3

Label elements

Signal Word Danger

H-code	Hazard Statements
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
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
H373	May cause damage to organs (Central nervous system, Liver, Kidney) through prolonged or repeated exposure if inhaled.
H412	Harmful to aquatic life with long lasting effects.
P-Code	**Precautionary Statement - Prevention**
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves / protective clothing / eye protection / face protection
P260	Do not breath dust , mist or vapors
P273	Avoid release to the environment
P-Code	**Precautionary Statement - Prevention**
P305, P351, P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P303, P361, P353	If on skin or hair: Take off immediately all contaminated clothing. Rinse skin with water / shower.
P304, P340	If inhaled: Remove person to fresh air and keep comfortable for breathing.
P301, P310	If swallowed: Rinse mouth. Do not induce vomiting. Immediately call poison center or doctor
P361, P364	Take off immediately all contaminated clothing and wash before reuse.
P314	Get Medical advice / attention if you feel unwell.
P331	Do NOT induce vomiting.
P337, P313	If eye irritation persists: Get medical advice/ attention.
P370, P378	In case of fire: Use dry sand, dry chemical or alcohol resistant foam to Extinguish.
P-Code	**Precautionary Statement - Storage**
P404, P233	Store in a well-ventilated place. Keep container tightly closed.
P-Code	**Precautionary Statement - Disposal**
P501	Dispose of contents / containers to hazardous or special waste collection point. In accordance with local regulation

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Name:	CAS No:	Proportion:
Prepolymer based on aromatic polyisocyanate	67815-87-6	30-60%
Diphenylmethane-2,2'-Diisocyanate	9016-87-9	10-30%
Xylene	1330-20-7	30-60%

SECTION 4 – FIRST AID MEASURES

Ingestion:	Do not induce vomiting. Wash mouth with water and seek medical attention immediately. If vomiting occurs, lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration. Avoid giving milk, oils or alcohol.
Inhalation:	Remove to fresh air. If breathing is difficult give oxygen. Keep patient warm and rested.
Eye Contact:	While holding eyes open, gently flood with plenty of fresh water for at least 15 minutes and seek medical attention. If irritation persists or recurs seek medical attention. Skilled personnel should only undertake removal of contact lenses after an eye injury.
Skin Contact:	Immediately remove all contaminated clothing. Flush contacted area thoroughly with soap and plenty of water. Seek medical attention in event of irritation.
Notes to Physician:	Treat symptomatically for simple esters. Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically.
First Aid Facilities:	Ensure availability of clean water for eye/skin wash.

SECTION 5 – FIRE FIGHTING MEASURES

Clear fire of all non-emergency personnel

Fire Fighting:	Full protective clothing as per personal protection in section 8.
Hazchem Code:	3[Y]
Fire Incompatibility:	Keep away from oxidizing agents, acids and alkalis.
Extinguishing Media:	Alcohol stable foam and Dry Chemical
Unsuitable Extinguishing Media:	
Specific Fire/Explosion Hazard:	Oxides of carbon and other possibly toxic fumes from fire.
Materials to Avoid:	-
Additional Advice:	Keep adjacent containers cool by spraying with water.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills and Disposal:	Remove all ignition sources. For major spills alert Fire Brigade and tell them location and nature of hazard. Clear area of personnel and move upwind. Small or major spills should be absorbed with dry, inert filler (soil or sand) which then can be shoveled into appropriately labeled drums for disposal. Disposal of this material should be undertaken by a registered chemical disposal company.
Environmental Precautions:	Do not discharge into sewers or waterways.

SECTION 7 – HANDLING & STORAGE

Procedures for safe handling:	
Conditions for safe storage:	Storage Requirements: Store in a cool, dry area Storage Incompatibility: Strong oxidizing agents, acids and alkalis Temperature Conditions: 5º to 35º C Protection from weather: Store undercover and away from frost and moisture
Corrosiveness:	

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

National occupational exposure limits:	Material	TWA ppm	STEL ppm
	Diphenylmethane diisocyanate, isomers and homologues	0.02mg/m3	0.07mg/m3
	diphenylmethane-4,4' diisocyanate	0.02mg/m3	0.07mg/m3
	Xylene	80	150

Personal Protection:
Eye: Chemical goggles or face shield to protect eyes
Body: Overalls clothing
Hands: Long PVC or nitrile rubber gauntlets
Respiratory: Type A P Filter of sufficient capacity.
Engineering controls: For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion resistant.
Environmental Exposure:
Controls:

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

Odour:
Colour: Dark Amber
Physical State: Liquid
Flash Point: 27°C
Boiling Point: 138°C
Melting Point: N/A
Specific Gravity: 1.00
pH (5% solution): N/A
Solubility in Water (g/L): Immiscible
Flammability:
Lower Limit: 1%
Higher Limit: 6%
Vapour Pressure: 1ca. 3.0 kPa
Vapour Density (Air = 1) N/A

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: This material is thermally stable when stored and used as directed.
Conditions of Chemical Instability Avoid heat, sparks, open flames and other ignition sources. Prevent vapor accumulation.
Hazardous Polymerization: N/A
Incompatible Materials: Keep away from oxidizing agents, acids and alkalis.
Hazardous Decomposition Products:
Oxides of carbon and nitrogen, smoke and other toxic fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Health Effects:
Oral: Prepolymer based on aromatic polyisocyanate

LD50 rat, male/female: > 2.000 mg/kg
Method: Directive 84/449/EEC, B.1
Toxicological studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
LD50 rat, male/female: > 10.000 mg/kg
Method: OECD Test Guideline 401

Dermal:

Prepolymer based on aromatic polyisocyanate
LD50 rabbit, male/female: > 9.400 mg/kg
Method: OECD Test Guideline 402
Studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
LD50 rabbit, male/female: > 9.400 mg/kg
Method: OECD Test Guideline 402

Inhalation

Prepolymer based on aromatic polyisocyanate
Assessment: Harmful by inhalation.
Studies of a comparable product.
Converted acute toxicity point estimate 1,5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement

diphenylmethane-diisocyanate, isomers and homologues
LC50 rat, male/female: 0,31 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Assessment: Harmful by inhalation.

Irritation:
Skin:

Prepolymer based on aromatic polyisocyanate
Classification: Causes skin irritation.

diphenylmethane-diisocyanate, isomers and homologues
Species: rabbit
Result: slight irritant
Method: OECD Test Guideline 404

Primary mucosa:

Prepolymer based on aromatic polyisocyanate
Classification: Causes serious eye irritation.

diphenylmethane-diisocyanate, isomers and homologues
Species: rabbit
Result: non-irritant
Method: OECD Test Guideline 405
Toxicological studies of a comparable product.

Respiratory or skin sensitization:

Respiratory sensitization
Classification: May cause sensitization by inhalation.
Classification according to Directive 2006/121/EC Annex VI

Carcinogenicity:

Prepolymer based on aromatic polyisocyanate
No data available.

diphenylmethane-diisocyanate, isomers and homologues
Species: rat, male/female
Application Route: Inhalative

Dose Levels: 0 - 0,2 - 1 - 6 mg/m3
Test substance: as aerosol
Exposure duration: 2 a
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Occurrence of tumors in the highest dose group.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)

Reproductive toxicity/Teratogenicity:

Prepolymer based on aromatic polyisocyanate
NOAEL (teratogenicity): 12 mg/m³
NOAEL (maternal): 4 mg/m³
NOAEL (developmental toxicity): 4 mg/m³
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 1 - 4 - 12 mg/m3
Frequency of treatment: 6 hours/day (Exposure duration: 10 days (day 6 - 15 p.c.))
Test period: 20 d
Test substance: as aerosol
Method: OECD Test Guideline 414
NOAEL (developmental toxicity): 4 mg/m3
Did not show teratogenic effects in animal experiments.
Studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
NOAEL (teratogenicity): 12 mg/m³
NOAEL (maternal): 4 mg/m³
NOAEL (developmental toxicity): 4 mg/m³
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 1 - 4 - 12 mg/m3
Frequency of treatment: 6 hours/day (Exposure duration: 10 days (day 6 - 15 p.c.))
Test period: 20 d
Test substance: as aerosol
Method: OECD Test Guideline 414
NOAEL (developmental toxicity): 4 mg/m3
Did not show teratogenic effects in animal experiments

Genotoxicity in vitro:

Prepolymer based on aromatic polyisocyanate
Test type: Salmonella/microsome test (Ames test)
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
Test type: Salmonella/microsome test (Ames test)
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

STOT evaluation – one-time exposure:

Prepolymer based on aromatic polyisocyanate
Route of exposure: Inhalative
Target Organs: Respiratory Tract
May cause respiratory irritation.

diphenylmethane-diisocyanate, isomers and homologues

Route of exposure: Inhalative
Target Organs: Respiratory Tract
May cause respiratory irritation.

STOT evaluation – repeated exposure:

Prepolymer based on aromatic polyisocyanate
Route of exposure: Inhalative
Target Organs: Respiratory Tract
May cause damage to organs through prolonged or repeated exposure.

diphenylmethane-diisocyanate, isomers and homologues
Route of exposure: Inhalative
Target Organs: Respiratory Tract
May cause damage to organs through prolonged or repeated exposure.

Additional Information:

Xylene: RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

diphenylmethane-diisocyanate, isomers and homologues
Special properties/effects: Over-exposure entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:

Acute Fish toxicity:
LC50 > 100 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
Studies of a comparable product.

Acute toxicity for daphnia:
EC50 83 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
Studies of a comparable product.

Chronic toxicity to daphnia:
Prepolymer based on aromatic polyisocyanate
NOEC (Reproduction) > 10 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 202
Studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
NOEC (Reproduction) > 10 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 202

Acute toxicity for algae:
ErC50 > 100 mg/l

Species: Desmodesmus subspicatus (Green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201
Studies of a comparable product.

Acute bacterial toxicity:
Prepolymer based on aromatic polyisocyanate
EC50 > 100 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
EC50 > 100 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms:
diphenylmethane-diisocyanate, isomers and homologues
NOEC (mortality) > 1.000 mg/kg
Species: Eisenia fetida (earthworms)
Exposure duration: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial plants:
diphenylmethane-diisocyanate, isomers and homologues
NOEC (seedling emergence) > 1.000 mg/kg
Species: Avena sativa (oats)
Exposure duration: 14 d
Method: OECD Test Guideline 208
NOEC (Growth rate) > 1.000 mg/kg
Species: Avena sativa (oats)
Exposure duration: 14 d
Method: OECD Test Guideline 208
NOEC (seedling emergence) > 1.000 mg/kg
Species: Lactuca sativa (lettuce)
Exposure duration: 14 d
Method: OECD Test Guideline 208
NOEC (Growth rate) > 1.000 mg/kg
Species: Lactuca sativa (lettuce)
Exposure duration: 14 d
Method: OECD Test Guideline 208

Ecotoxicology Assessment
Chronic aquatic toxicity: Harmful to aquatic life with long lasting effects.

Persistence/Degradability:

Biodegradability
Prepolymer based on aromatic polyisocyanate
Biodegradation: 0 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
Studies of a comparable product.

diphenylmethane-diisocyanate, isomers and homologues
Test type: aerobic
Inoculum: activated sludge

Biodegradation: 0 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
According to the results of tests of biodegradability this product is not readily biodegradable.

Stability in water:
diphenylmethane-diisocyanate, isomers and homologues
Test type: Hydrolysis
Half life: 20 h at 25 °C
The substance hydrolyzes rapidly in water.
Studies of a comparable product.

Photodegradation:
diphenylmethane-diisocyanate, isomers and homologues
Test type: Phototransformation in air
Temperature: 25 °C
sensitizer: OH-radicals
Concentration sensibilisator: 500.000 1/cm3
Half-life indirect photolysis: 0,92 d
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be moderately degraded by photochemical processes.
Studies of a comparable product.

Bioaccumulative potential:

diphenylmethane-diisocyanate, isomers and homologues
Bioconcentration factor (BCF): < 14
Species: Cyprinus carpio (Carp)
Exposure duration: 42 d
Concentration: 0,2 mg/l
Method: OECD Test Guideline 305 C
An accumulation in aquatic organisms is not to be expected.
The substance hydrolyzes rapidly in water.
Studies of hydrolysis products.

Mobility: No data available
Results of PBT and vPvB assessment No data available
Other adverse effects: Isocyanate reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

Xylene: Toxic to aquatic life.

SECTION 13 – DISPOSAL CONSIDERATIONS

Material Disposal: State/Territory authority: Observe all Federal, State and Local Regulations Disposal: Secure landfill. Precautions for clean-up crew: Full protective clothing as per personal protect. in section 8 Containers may still present a chemical hazard/danger when empty.

SECTION 14 – TRANSPORT INFORMATION

U.N. Number: 1866
DG Class: 3
EPG card: 8A1
Hazchem Code: 3[Y]
Proper Shipping Name: Resin Solution, Flammable
Packing Group: III

Poison Schedule 6

SECTION 15 – REGULATORY INFORMATION

Australian Inventory (AICS): Listed
SUSDP Schedule None
Regulations: All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

SECTION 16 – OTHER INFORMATION

Safety Data Sheets are updated regularly. Please ensure you have a current copy. SDS can be obtained from our website: www.envirosystems.com.au
The SDS should be used to assist in the Risk Management. Many other factors determine whether the reported Hazards are risks in any given workplace.
Specific Risks may be determined by reference to various Exposure Scenarios, Scale of use, Frequency of use and current or available engineering controls must be considered.

Emergency Telephone: Info Safe – 1800 638 556, Poisons Centre – 131126