

# SAFETY DATA SHEET

Part No.: ECO.APC.B.55

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014

**PRODUCT NAME: EcoTite APC Resin**

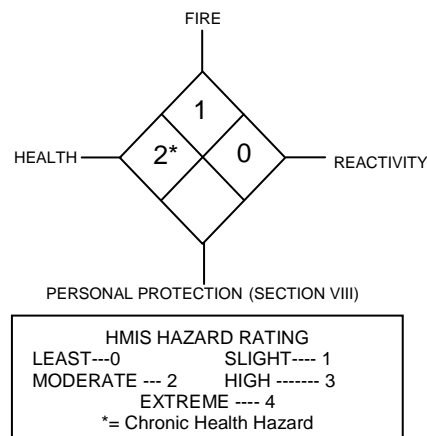
## SECTION 1 - MANUFACTURER IDENTIFICATION

**MANUFACTURER'S NAME:** Pinnacle West Enterprises Inc.

**ADDRESS:** 31897 Mercantile Way, Abbotsford, BC, V2T 4C3

**INFORMATION PHONE:** 604-854-5968

**EMERGENCY CONTACT: (CHEMTREC): 800-424-9300**



## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

### Hazardous Components

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
60 - 90	Glycol	111-46-6
10 - 20%	Diethyltoluenediamine (DETDA)	68479-98-1
1 - 5%	Chlorinated Phosphate Ester	13674-84-5

## SECTION 3 - HAZARDS IDENTIFICATION

### Emergency Overview

**Warning!**      **Color: Colorless, Amber**      **Form: liquid**      **Odor: Amine**  
Harmful by inhalation, in contact with skin and if swallowed. Inhalation, skin absorption, or ingestion may cause methemoglobin formation resulting in reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of skin, fingernails and lips). Toxic gases and fumes may be given off during burning or thermal decomposition. Use a cold water spray to cool fire exposed containers to minimize the risk of rupture. May cause respiratory tract irritation. May cause skin irritation. May cause liver damage.

### Primary Health Effects

**Primary Routes of Entry:** Skin Contact, Eye Contact

**Medical Conditions Aggravated by Exposure:** Skin disorders, Respiratory disorders, Eye disorders

### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

#### Inhalation

#### Acute Inhalation

#### Diethyltoluenediamine (DETDA)

Vapors or mist at levels above exposure limits or guidelines may cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptoms of cyanosis (purplish-blue coloring of the skin, fingernails and lips). If misted or handled at elevated temperatures, high

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concentrations may cause respiratory tract irritation.

**Chlorinated Phosphate Ester**

May cause respiratory tract irritation with symptom of coughing, sore throat and runny nose.

**Skin****Acute Skin****Diethyltoluenediamine (DETDA)**

Causes irritation with symptoms of reddening, itching, and swelling. May cause liver damage.

**Chlorinated Phosphate Ester**

Slight irritation

**Eye****Acute Eye****Diethyltoluenediamine (DETDA)**

Causes irritation with symptoms of reddening, tearing, stinging, and swelling. Vapor may cause irritation with symptoms of burning and tearing.

**Chlorinated Phosphate Ester**

Not expected to cause irritation.

**Ingestion****Acute Ingestion****Diethyltoluenediamine (DETDA)**

Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs). Symptoms of ingestion may include abdominal pain, nausea, vomiting and diarrhea. May cause methemoglobin formation resulting in a reduced ability of the blood to carry oxygen; a symptom of this may be cyanosis (purplish-blue coloring of the skin, fingernails and lips). Harmful if swallowed.

**Chlorinated Phosphate Ester**

May be harmful if swallowed. Symptoms may include abdominal pains, nausea, vomiting and diarrhea. Moderately toxic by ingestion.

**Chronic Ingestion****Diethyltoluenediamine (DETDA)**

May cause liver damage.

**Chlorinated Phosphate Ester**

May cause liver and Kidney damage.

**Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

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<b>SECTION 4 – FIRST AID MEASURES</b>
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**Skin****Acute Skin**

May cause irritation with symptoms of reddening, itching, swelling and rash. Immediately remove contaminated clothing and shoes. Wash affected areas, including hair, beneath nails and other concealed areas with Polyethylene Glycol 400 and repeat washing off with soap and water. If Propylene Glycol 400 is not available wash immediately with soap and water. For severe exposure immediately get under safety shower and begin rinsing. Seek immediate medical attention. Clothing and shoes should be washed in soap and water before reuse.

**Eye****Acute Eye**

In case of contact, immediately flush eyes with water for a minimum of 15 minutes. Use lukewarm water if possible. Keep eyelids separated using fingers to insure proper irrigation of eyes. Remove contact lenses, if easily removable and continue flushing with water for no less than 15 minutes. Seek medical attention immediately.

**Ingestion****Acute Ingestion**

May be harmful if swallowed. Do not induce vomiting unless directed to do so by medical personnel. Wash mouth out with copious amounts of water and give two glasses of water to drink for dilution. Do Not give anything by mouth to an unconscious person. Seek immediate medical attention.

**Inhalation**

If inhaled move immediately to fresh air. If not breathing, give artificial respiration using a pocket mask type resuscitator. If breathing is difficult administer oxygen. In case of cyanosis (blue discoloration of skin lips or fingernails) give oxygen to breath. Seek immediate medical attention.

**Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

**Notes to physician**

Immediately give oxygen if victim turns blue (skin, lips or fingernails). Since reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures.

<b>SECTION 5 – FIRE FIGHTING MEASURES</b>
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DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Resin****Suitable Extinguishing Media:** Dry chemical, carbon dioxide (CO<sub>2</sub>), foam, water spray for large fires.**Special Fire Fighting Procedures**

Firefighters should be equipped with self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves to protect against potentially toxic and irritating fumes. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. Use cold-water spray to cool fire exposed containers to minimize the risk of rupture.

**SECTION 6 – ACCIDENTAL RELEASE MEASURES****Spill and Leak Procedures**

Remove all sources of ignition, including flames, heat and sparks. Ventilate area to remove vapors or dust. Cleanup personnel must use appropriate personal protective equipment. Dike or dam spill and prevent further spillage. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Prevent from entering open drains and waterways. Notify local health and safety authorities and other appropriate agencies if necessary. Ventilate area to remove vapors or dust. Evacuate and keep unnecessary people out of spill area.

**SECTION 7 – HANDLING AND STORAGE****Storage Temperature:****minimum:** 4.44 °C (40 °F)**maximum:** 50 °C (122 °F)**Storage Period** 6 Months: after receipt of material by customer @25°C (77°F)**Handling/Storage Precautions**

Avoid contact with skin or clothing. Avoid contact with eyes. Use only with adequate ventilation/personal protection. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb atmospheric moisture. If contaminated Do not breathe vapors or spray mist. Store in a dry place away from excessive heat. Protect from freezing.

**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION****Diethyltoluenediamine (DETD)**

Pinnacle West Exposure Limit  
Time Weighted Average (TWA): 0.02 ppm

**Industrial Hygiene/Ventilation Measures**

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls. General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. When engineering controls are not available to achieve full protection, the use of respirators and other personal protective equipment is mandated.

**Respiratory Protection**

The use of a positive pressure supplied air respirator is recommended if the airborne

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concentration is unknown or if spraying is performed in a confined space or area with limited ventilation, In spray applications, an organic vapor/particulate respirator or air supplied unit is necessary. NIOSH approved, air-purifying respirator with organic vapor cartridges and N-95 filters and full face piece is recommended.

**Hand Protection**

Permeation resistant gloves, 4H laminate gloves, Butyl rubber gloves, Nitrile rubber gloves.

**Eye Protection**

Chemical safety goggles or safety glasses with side-shields., Chemical safety goggles in combination with a full face shield if a splash hazard exists.

**Skin and body protection**

Permeation resistant clothing,

**Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

<b>Form:</b>	Liquid
<b>Appearance:</b>	
<b>Color:</b>	Colorless, Amber
<b>Odor:</b>	Amine
<b>pH:</b>	10
<b>Freezing Point:</b>	Not Established
<b>Boiling Point/Range:</b>	Not Established
<b>Flash Point:</b>	>93.33 °C (>200 °F)
<b>Specific Gravity:</b>	Approximately 1.02 @ 20°C (68°F)
<b>Solubility in Water:</b>	Partially soluble
<b>Autoignition Temperature:</b>	Approximately 445°C (833°F)
<b>Bulk Density:</b>	Approximately 8.51 lb/gal
<b>Molecular Weight:</b>	500 Approximate Value, For the polyisocyanate

**SECTION 10 – STABILITY AND REACTIVITY****Hazardous Reactions**

Hazardous polymerization does not occur.

**Stability**

Stable under normal conditions of use and storage.

**Materials to avoid**

Oxidizing Agents, Isocyanates

**Conditions to avoid**

Avoid extreme heat.

**Hazardous decomposition products**

By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of

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nitrogen (NOx), dense black smoke, Hydrogen cyanide, Amines, other aliphatic fragments which have not been determined.

**SECTION 11 – TOXICOLOGICAL INFORMATION****Toxicity Data for Vegetable Oil****Acute Oral Toxicity**

LD50: > 4952 mg/kg (Rat)  
Estimated Value

**Skin Irritation**

Human, Patch Test, Exposure 48 hrs, Moderately irritating  
rabbit, Moderately irritating

**Eye Irritation**

rabbit, Draize, Exposure 24 hrs, Slightly irritating

**Repeated Dose Toxicity**

13 weeks, oral: NOAEL: 10% (Rat, Male/Female, daily)  
13 weeks, oral: NOAEL: 10% (Mouse, Male/Female, daily)

**Mutagenicity**

Genetic Toxicity in Vitro:  
Ames: Negative results were reported in various studies. (Salmonella, Metabolic Activation:with/without)  
Genetic Toxicity in Vivo:  
Micronucleus Assay: negative (Mouse, Male/Female, oral)

**Toxicity for Diethyltoluenediamine (DETDA)****Acute Oral Toxicity**

LD50: 472 mg/kg (Rat, Female)

**Acute Inhalation Toxicity**

LC50: >2.45 mg/l, 1 hrs (Rat)

**Acute Dermal Toxicity**

LD50: 1000 mg/kg (rabbit)

**Skin Irritation**

rabbit, OCED Guideline for Testing of Chemicals, No. 404, Non-irritating

**Eye Irritation**

rabbit, Irritating to eyes.

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**PRODUCT NAME: EcoTite APC Resin****Sensitization**

dermal: non-sensitizer (Guinea pig, Maximization Test GPMT))

**Repeated Dose Toxicity**

21 Days, dermal: NOAEL: 1 mg/kg (Rabbit, Male/Female, daily)

13 Days, inhalation: NOAEL: <10 mg/l, (Rat,)

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: positive (Salmonella, Metabolic Activation: with)

Positive and negative results were seen in various in vitro studies.

Genetic Toxicity in Vivo:

Dominant lethal Assay: negative (Rat, Male/Female, oral)

**Carcinogenicity**

Rat, Male/Female, oral, 2 years, daily

Positive

**Toxicity for Glycol****Acute Oral Toxicity**

LD50: >5000 mg/kg (Rat)

**Acute Inhalation Toxicity**

LC50: 6 - 8 mg/l aerosol, 8 hrs (rat)

**Acute Dermal Toxicity**

LD50: >5000 mg/l dermal, 8 hrs (rabbit)

**Skin Irritation**

rabbit, Exposure, 24 hrs, Slightly irritating

**Eye Irritation**

rabbit, Non-Irritating to eyes.

**Sensitization**

dermal: non-sensitizer (Human, Maximization Test Magnusson/Kligmann))

**Repeated Dose Toxicity**

77 Days, Oral, NOAEL: 5%, (Rat,)

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: Negative results were reported in various in vitro studies. (Salmonella, Metabolic Activation: with/without)

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**PRODUCT NAME: EcoTite APC Resin****Toxicity to Reproduction/Fertility**

Fertile screening, oral, daily, (rabbit, female) NOAEL (paternal): 1200 mg/kg.  
No effects on Reproductive parameters observed at doses tested.

**Developmental Toxicity/Teratogenicity**

Rat female, oral, gestation, daily, NOAEL (teratogenicity): 5000 mg/kg, NOAEL (maternal): 800 mg/kg. No Teratogenic effects observed at doses tested.  
Rabbit, female, oral, gestation, daily, NOAEL (teratogenicity): 1200 mg/kg, NOAEL (maternal): 1200 mg/kg. No fetotoxicity observed at doses tested.

**Toxicity for Chlorinated Phosphate Ester****Acute Oral Toxicity**

LD50: 632 mg/kg (Rat)

**Acute Inhalation Toxicity**

LC50: 17,800 mg/l aerosol, 1 hrs (rat, male/female)

**Acute Dermal Toxicity**

LD50: >5000 mg/l (rabbit, male/female)

**Skin Irritation**

Human, Patch Test, No skin irritation  
rabbit, No skin irritation

**Eye Irritation**

rabbit, Draize, Exposure Time 24 hrs, Mild eye irritation  
rabbit, No eye irritation

**Sensitization**

dermal: non-sensitizer (Human, Maximization Test (GPMT))  
dermal: non-sensitizer (Human, Patch Test)

**Repeated Dose Toxicity**

90 Days, Oral, NOAEL: 36 mg/kg, (Rat, male)

**Mutagenicity**

Genetic Toxicity in Vitro:  
Ames: Negative (Salmonella, typhimurium, Metabolic Activation: with/without)  
Positive and negative results were reported.  
Mammalian cell- gene mutation assay: positive (Mouse lymphoma cells (L5178Y/TK), Metabolic Activation: with)  
Positive and negative results were reported.



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**PRODUCT NAME: EcoTite APC Resin****Toxicity to Reproduction/Fertility**

Other method, inhalation, daily, (rat,male)  
Reproductive effects have been observed in animal studies.

**Developmental Toxicity/Teratogenicity**

Rat female, oral, gestation, daily, NOAEL (teratogenicity): >1%, NOAEL (maternal): >1% No  
Teratogenic effects observed at doses tested. No fetotoxicity observed at doses tested.

**SECTION 12 – ECOLOGICAL INFORMATION****Ecological Data for Vegetable Oil****Biodegradation**

>60%

**Acute and Prolonged Toxicity to Fish**

LC50: > 1000 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)

**Toxicity to Microorganisms**

EC10: > 54,000 mg/l, (Pseudomonas putida)

**Ecological Data for Diethyltoluenediamine (DETDA)****Biodegradation**

Aerobic, 0% Exposure Time 28 days

**Chemical Oxygen Demand (COD)**

2370 mg/g

**Acute and Prolonged Toxicity to Fish**

LC50: 194 mg/l (Golden orfe (Leuciscus idus), 48 hrs)

**Acute Toxicity to Aquatic Invertebrates**

EC50: approx. 0.5 mg/l (Water flea (Daphnia magna), 48 hrs)

**Toxicity to Microorganisms**

EC10: > 170 mg/l, (Pseudomonas putida, 24hrs)

**Ecological Data for Glycol****Biodegradation**

Aerobic, 16% Exposure Time 28 days

Aerobic 100% Exposure Time 1 Days

**Biological Oxygen Demand (BOD)**

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5, Days, 92,268 mg/l

**Chemical Oxygen Demand (COD)**

1840 mg/g

**Theoretical Biological Oxygen Demand (ThBOD)**

0.49

**Bioaccumulation**

Carp, Exposure Time: 42 Days, 0.3 – 1.4 BCF

**Acute and Prolonged Toxicity to Fish**

LC50: >5000 mg/l (Goldfish (*Carassius auratus*), 24 hrs)

**Toxicity to Microorganisms**

EC10: > 15400 mg/l, (*Pseudomonas putida*, 16hrs)

**Ecological Data for Chlorinated Phosphate Ester****Biodegradation**

Aerobic, 0% Exposure Time 28 days Not readily biodegradable

**Biological Oxygen Demand (BOD)**

5, Days, 92,268 mg/l

**Bioaccumulation**

Carp, Exposure Time: 42 Days, 0.8 – 2.8 BCF

**Acute and Prolonged Toxicity to Fish**

LC50: approx. 84 mg/l (Bluegill (*Lepomis macrochirus*), 96 hrs)

LC50: 51 mg/l (Fathead minnow (*Pimephales promelas*), 96 hrs)

LC50: 30 mg/l (Guppy (*Poecilia reticulata*), 96 hrs)

**Toxicity to Microorganisms**

EC50: 295 mg/l, (*Photobacterium phosphoreum*, 30 min)

EC50: 784 mg/l, (Activated sludge microorganisms, 3 hrs)

**Acute Toxicity to Aquatic Invertebrates**

EC50: approx. 131 mg/l (Water flea (*Daphnia magna*), 48 hrs)

**Acute Toxicity to Aquatic Plants**

EC50: 45 mg/l, End Point: biomass (Green algae (*Scenedesmus subspicatus*), 72 hrs)

EC50: 41 – 55 mg/l, End Point: biomass Green algae (*Scenedesmus subspicatus*), 72 hrs)

**SECTION 13 – DISPOSAL CONSIDERATIONS**

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**PRODUCT NAME: EcoTite APC Resin****Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**

Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut container with electric or gas torch.

**SECTION 14 – TRANSPORTATION INFORMATION****Land transport (DOT)**

Non- Regulated

**Sea transport (IMDG)**

Non-Regulated

**Air transport (ICAO/IATA)**

Non-Regulated

**SECTION 15 – REGULATORY INFORMATION****United States Federal Regulations**

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

**US. EPA CERCLA Hazardous Substances (40 CFR 302):****Components:**

None

**SARA Section 311/312 Hazard Categories:**

Acute Health Hazard, Chronic Health Hazard

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):****Components:**

None

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:****Components:**

None

**US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):**

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If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

**State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Polyether Polyol	Trade Secret
>=1%	Vegetable Oil	Trade Secret
10-20%	Diethyltoluenediamine (DETDA) 68479-98-1	
>=1%	Polyether Polyol	Trade Secret
>=1%	Glycol	Trade Secret

**MA Right to Know Extrodinary Hazardous Substance List:**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
<10 ppm	Propylene Oxide	75-56-9

**California Prop. 65:**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
<10 ppm	Propylene Oxide	75-56-9
<50 ppm	2,2 Dichlorodiisopropyl ether	108-60-1

**SECTION 16 – OTHER INFORMATION****NFPA 704M Rating**

<b>Health</b>	2
<b>Flammability</b>	1
<b>Reactivity</b>	0
<b>Other</b>	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMS Rating**

<b>Health</b>	2*
<b>Flammability</b>	1
<b>Physical Hazard</b>	0

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0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe \* = Chronic Health Hazard

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# SAFETY DATA SHEET

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PRODUCT NAME: EcoTite APC Iso

## SECTION 1 - MANUFACTURER IDENTIFICATION

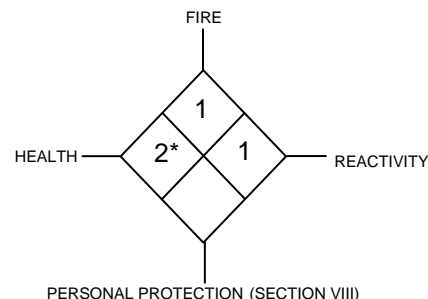
MANUFACTURER'S NAME: Pinnacle West Enterprises Inc.

ADDRESS: 31897 Mercantile Way, Abbotsford, BC, V2T 4C3

INFORMATION PHONE: 604-854-5968

EMERGENCY CONTACT: (CHEMTREC): 800-424-9300

CHEMICAL Family: Aromatic Isocyanate Prepolymer  
CHEMICAL Name: Diphenylmethane Diisocyanate (MDI) Prepolymer



HMIS HAZARD RATING	
LEAST --- 0	SLIGHT --- 1
MODERATE --- 2	HIGH ----- 3
	EXTREME ---- 4
*Chronic Health Hazard	

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

### Hazardous Components

Weight %	Components	CAS-No.
40 - 50%	Polyurethane Prepolymer	39420-98-9
20 - 30%	Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5
15 - 25%	4,4- Diphenylmethane Diisocyanate	101-68-8
7 - 13%	Aluminum	7429-90-5
3 - 7%	Stoddard Solvent	8052-41-3

## SECTION 3 - HAZARDS IDENTIFICATION

### Emergency Overview

**WARNING! Color: Gray Form: liquid Odor: Slight**

Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents is contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Product, based on components, may be toxic by inhalation, ingestion and skin absorption. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. May cause permanent lung damage and respiratory sensitization. May cause allergic skin reaction. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Animal tests and other research have shown that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. Causes eye irritation. Harmful if swallowed. May cause lung damage.

### Primary Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact, Inhalation

### Medical Conditions Aggravated by Exposure:

Skin disorders, Respiratory disorders, Asthma, Skin Allergies, Eczema

DATE: April 28, 2014  
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Diisocyanate or polyisocyanate vapors or mist at levels above exposure limits or guidelines can irritate the mucous membranes of the respiratory tract (throat, nose, lungs with a burning sensation) with symptoms of runny nose, sore throat, coughing, chest discomfort shortness of breath and reduced lung function (breathing obstruction). People with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma like symptoms. Exposure well above the TLV or PEL limits may lead to bronchitis, bronchial spasms and pulmonary edema (fluid on the lungs). These symptoms can be delayed for up to several hours after exposure. These effects are usually reversible.

**For Component: Stoddard Solvent**

Inhalation of solvent may cause central nervous system depression with symptoms of nausea, lightheadedness, drowsiness, dizziness and loss of co-ordination.

**Skin****Acute Skin****For Component: Diphenylmethane Diisocyanate (MDI), 4,4- Diphenylmethane Diisocyanate**

Causes irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

**For Component: Stoddard Solvent**

May cause irritation with symptoms of itching and skin reddening.

**Chronic Skin****For Component: Diphenylmethane Diisocyanate (MDI), 4,4- Diphenylmethane Diisocyanate**

Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

**For Component: Stoddard Solvent**

May cause symptoms of dryness and cracking. Chronic exposure may cause symptoms similar to those described in chronic inhalation.

**Eye****Acute Eye****For Component: Diphenylmethane Diisocyanate (MDI), 4,4- Diphenylmethane Diisocyanate**

Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

**For Component: Stoddard Solvent**

May cause irritation with symptoms of reddening, tearing, and stinging.

**PRODUCT NAME: EcoTite APC Iso****Chronic Eye**

**For Component: Diphenylmethane Diisocyanate (MDI), 4,4- Diphenylmethane Diisocyanate**  
Prolonged vapor contact may cause conjunctivitis.

**For Component: Stoddard Solvent**

Prolonged vapor contact may cause conjunctivitis.

**Ingestion****Acute Ingestion**

**For Component: Diphenylmethane Diisocyanate (MDI), 4,4- Diphenylmethane Diisocyanate**  
May cause irritation; Symptoms may include abdominal pains, nausea, vomiting and diarrhea.

**For Component: Stoddard Solvent**

Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs).

**Chronic Ingestion****For Component: Stoddard Solvent**

Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage.

**Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

<b>SECTION 4 – FIRST AID MEASURES</b>
---------------------------------------

**Skin**

Immediately remove contaminated clothing and shoes. Wash off with soap and water. For severe exposure immediately get under safety shower and begin rinsing. Seek immediate medical attention. Clothing and shoes should be washed in soap and water before reuse.

**Eye**

In case of contact, immediately flush eyes with water for a minimum of 15 minutes. Use lukewarm water if possible. Keep eyelids separated using fingers to insure proper irrigation of eyes. Remove contact lenses, if easily removable and continue flushing with water for no less than 15 minutes. Seek medical attention if irritation develops.  
Vapor may cause irritation with symptoms of burning and tearing.

**Ingestion**

Do not induce vomiting. Wash mouth out with copious amounts of water. Seek immediate medical attention. Do Not give anything by mouth to an unconscious person.

**Inhalation**

Remove victim from exposed area to an area free from further exposure. Seek medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop immediately or can be delayed up to several hours. Extreme asthmatic reaction can be life threatening.



DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Iso****Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

**Notes to physician**

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Work place vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any Diisocyanate chemicals.

**SECTION 5 – FIRE FIGHTING MEASURES**

**Suitable Extinguishing Media:** Dry chemical, carbon dioxide (CO<sub>2</sub>), foam, water spray for large fires.

**Special Fire Fighting Procedures**

Firefighters should be equipped with self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves to protect against potentially toxic and irritating fumes. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated Diisocyanate can be extremely dangerous.

**Unusual Fire/Explosion Hazards**

Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Closed containers may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> gas) formed. Use cold-water spray to cool fire exposed containers to minimize the risk of rupture. Large fires can be extinguished using large volumes of water from a safe distance, since reaction between water and hot Diisocyanate can be vigorous.

**SECTION 6 – ACCIDENTAL RELEASE MEASURES****Spill and Leak Procedures**

Evacuate and keep all unnecessary people out of spill area. Remove any ignition sources. Notify management. Cleanup personnel must use appropriate personal protective equipment. Control the source of leak. Contain minor spill or leak and cover with inert material (e. g., dry sand, Oil-Dri or kitty litter, etc) Saturate absorbent with neutralization solution, mix wait 15 minutes and collect in open head metal containers for proper disposal. Repeat decontamination with neutralization solution scrubbing surface with stiff bristle broom followed by absorbent until surface is decontaminated. Use Swype test kits to check contamination of surface. Prevent from entering open drains and waterways. Notify local health and safety authorities and other appropriate agencies if necessary. Ventilate area to remove vapors or dust. Major spills or leaks (Standing Liquid): May be pumped into closed but not sealed, metal containers for proper disposal. Allow containers to remain open for 72 hours to allow carbon dioxide to escape. Process can generate heat.

**Neutralization Solution:** A Mixture of 90% water, 3 to 8% Ammonia and 2% liquid detergent.

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Iso****SECTION 7 – HANDLING AND STORAGE****Storage Temperature:****minimum:** 15 °C (59 °F)**maximum:** 35 °C (95 °F)**Storage Period** 6 Months: after receipt of material by customer @25°C (77°F)**Handling/Storage Precautions**

Avoid contact with skin or clothing. Avoid contact with eyes. Use only with adequate ventilation/personal protection to keep airborne isocyanate levels below exposure limits. Wear respirator protection if material is heated, sprayed, used in confined space or if the exposure limit is exceeded. Warning properties (irritation of eyes, nose, throat or odor) are not adequate to prevent overexposure from inhalation. Wash thoroughly after handling. Keep container closed when not in use. Do not breathe smoke or gases created by overheating or burning of this material. Store in a dry place away from excessive heat. Protect from freezing. Keep container closed when not in use and do not reseal if contamination is suspected..

**Further Info on Storage Conditions**

Store in a cool dry place. Store in original or similar containers. Protect from freezing. Employee education and training in the safe use and handling of this product are required under OSHA Hazard Communication Standard 29 CFR 1910.1200

**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION****Industrial Hygiene/Ventilation Measures**

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls. General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place. When engineering controls are not available to achieve full protection, the use of respirators and other personal protective equipment is mandated.

**Respiratory Protection**

The use of a positive pressure supplied air respirator is recommended if the airborne concentration is unknown or if spraying is performed in a confined space or area with limited ventilation., In spray applications, an organic vapor/particulate respirator or air supplied unit is necessary.

**Hand Protection**

Permeation resistant gloves, 4H laminate gloves, Butyl rubber gloves, Nitrile rubber gloves.

**Eye Protection**

Chemical safety goggles or safety glasses with side-shields., Chemical safety goggles in combination with a full face shield if a splash hazard exists.

**Skin and body protection**

Avoid all skin contact. Depending on conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates. Permeation resistant clothing should be worn.

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Iso****Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.

**Medical Surveillance**

All personnel who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from the isocyanate work areas. Personnel who have a history of adult asthma should be restricted from working with isocyanates. Any personnel with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive medical evaluation program should be instituted for all personnel who are working with or are potentially exposed to diisocyanates. It is recommended that personnel working with or around spray applications should have a Pulmonary Function Test yearly. Once a person has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

<b>Form:</b>	Liquid
<b>Color:</b>	Gray
<b>Odor:</b>	Slightly musty
<b>pH:</b>	Not Applicable
<b>Freezing Point:</b>	Not Established
<b>Boiling Point/Range:</b>	208°C (407 °F)
<b>Flash Point:</b>	86°C (186.8 °F)
<b>Vapor Pressure:</b>	<0.0001 mmHg @77°F (25°C)
<b>Specific Gravity:</b>	1.1 @ 25°C (77°F)
<b>Solubility in Water:</b>	Insoluble- Reacts slowly with water to liberate CO@ gas
<b>Bulk Density:</b>	9.17 lb/gal

**SECTION 10 – STABILITY AND REACTIVITY****Hazardous Reactions**

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization.

**Stability**

Stable under normal conditions of use and storage.

**Materials to avoid**

Waters, Amines, Strong bases, Alcohols, copper alloys

**Conditions to avoid**

Avoid extreme heat.

**Hazardous decomposition products**

By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke, Hydrogen cyanide, Isocyanate, Isocyanic Acid, other undetermined compounds.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Iso****Toxicity Data for Elastomeric Roofing Isocyanate****Toxicity Note**

Toxicity data based on polymeric MDI

**Acute Oral Toxicity**

LD50: &gt; 2,000 mg/kg (rat male/female)

**Acute Inhalation Toxicity**LC50: 490 mg/m<sup>3</sup>, vapor, 4 hrs (rat)**Skin Irritation**

rabbit, Slightly irritating

**Repeated Dose Toxicity**90 Days, Inhalation: NOAEL: 1 mg/m<sup>3</sup>, (rat, male/female, 6hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

2 years, inhalation: NOAEL: 0.2 mg/m<sup>3</sup>, (rat, male/female, 6hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

**Carcinogenicity**

Rat, male/female, inhalation, 2years, 6hrs/day, 5 days/week

Exposure to a level of 6mg/m<sup>3</sup> polymeric MDI was related to the occurrence of lung tumors. This level is significantly over the TLV for MDI.**Developmental Toxicity/Teratogenicity**Rat, female, inhalation, gestation days 6 – 15, 6 hrs/day, NOAEL (teratogenicity): 12mg/m<sup>3</sup>,NOAL (maternal): 4 mg/m<sup>3</sup>

No Teratogenic effects observed at doses tested. Fetotoxicity seen only seen with maternal toxicity.

**Toxicity Data for 4,4- Diphenylmethane Diisocyanate (MDI)****Acute Inhalation Toxicity**LC50: 369 mg/m<sup>3</sup>, vapor, 4 hrs (rat,male/female)LC50: >2240 mg/m<sup>3</sup>, aerosol, 1 hr (rat)**Acute dermal toxicity**

LD50: &gt; 10,000 mg/kg (Rabbitt)

**Skin Irritation**

rabbit, Draize, Moderately irritating

**Eye Irritation**

rabbit, Draize, Slightly irritating

**Sensitization**

dermal: sensitizer (Guinea pig, Maximization Test (GPMT))

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inhalation: sensitizer (Guinea pig)

**Repeated Dose Toxicity**90 Days, inhalation: NOAEL: 0.3 mg/m<sup>3</sup>, (Rat, male/female, 18hrs/day, 5 days/week)  
Irritation to lungs and nasal cavity.**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: (Salmonella typhimurium, Metabolic Activation: with/without)

Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing positive Mutagenicity results.

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (mouse)

**Carcinogenicity**

Rat, female, inhalation, 2years, 17hrs/day, 5 days/week

Negative

**Toxicity Data for Stoddard Solvent****Acute Inhalation Toxicity**LC<sub>50</sub>: 1700 ppm, 7 hrs (cat)**Eye Irritation**

Rabbit, Draize, Exposure Time: 24 hrs, Moderately irritating

**SECTION 12 – ECOLOGICAL INFORMATION****Ecological Data for Elastomeric Roofing Isocyanate****Biodegradation**

0 %, Exposure time: 28 Days, Not readily biodegradable.

**Bioaccumulation**

Rainbow trout, Exposure Time: 112 days, &lt;1BCF

Does not bioaccumulate.

**Acute and Prolonged Toxicity to Fish**LC<sub>50</sub>: > 1000 mg/l (Zebra fish (Brachydanio rerio), 96 hrs)LC<sub>50</sub>: > 3000 mg/l (Killifish (Oryzias latipes), 48 hrs)**Acute Toxicity to Aquatic Invertebrates**EC<sub>50</sub>: > 1000 mg/l (Water flea (Daphnia magna), 24 hrs)**Toxicity to Aquatic Plants**

NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 hrs)

**Toxicity to Microorganisms**EC<sub>50</sub>: > 1,00 mg/l, (Activated sludge microorganisms, 3 hrs)

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014**PRODUCT NAME: EcoTite APC Iso****Additional Ecotoxicological Remarks**

Ecotoxicity data base on polymeric MDI.

**Ecological Data for 4,4- Diphenylmethane Diisocyanate****Acute and Prolonged Toxicity to Fish**

LC50: 500 mg/l (Zebra fish (Brachydanio rerio), 24 hrs)

**Acute Toxicity to Aquatic Invertebrates**

EC50: 500 mg/l (Water flea (Daphnia magna))

**SECTION 13 – DISPOSAL CONSIDERATIONS****Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**

Recondition or dispose of empty container in accordance with governmental regulations. Do not reuse empty container without proper cleaning. Empty containers retain product residue (dust, liquid, vapor and/or gases) and can be dangerous. Do not heat or cut container with electric or gas torch.

**SECTION 14 – TRANSPORTATION INFORMATION****Land transport (DOT)**

Proper Shipping Name: Other regulated substances, (liquids, n.o.s. (contains 4,4'-Diphenylmethane Diisocyanate (MDI))

Hazard Class or Division: 9

UN/NA Number NA3082

Package Group III

Hazard Label(s) Class 9

**RSPA/DOT Regulated Components:** 4,4'-Diphenylmethane Diisocyanate (MDI))

Reportable Quantity: 20,000 lbs

**Sea transport (IMDG)** Non-Regulated**Air transport (ICAO/IATA)** Non-Regulated**Additional Transportation Information**

When in individual containers less than the reportable quantity this product ships as non-regulated..

**SECTION 15 – REGULATORY INFORMATION****United States Federal Regulations**

# SAFETY DATA SHEET

Part No.: ECO.APC.A.55

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014

## PRODUCT NAME: EcoTite APC Iso

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

### US. EPA CERCLA Hazardous Substances (40 CFR 302):

#### Components:

4,4'-Diphenylmethane Diisocyanate (MDI) Reportable quantity: 5000 lbs

### SARA Section 311/312 Hazard Categories:

Acute Health Hazard, Chronic Health Hazard

### US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

#### Components:

None

### US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

#### Components:

4,4'-Diphenylmethane Diisocyanate (MDI))

Aluminum

### US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

#### State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

#### **Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Weight %</u>	<u>Components</u>	<u>CAS-No.</u>
40 – 50%	Polyurethane Prepolymer	39420-98-9
20 – 30%	Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5
15 -25%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
7 – 13%	Aluminum	7429-90-5
3 – 7%	Stoddard Solvent	8052-41-3

#### **New Jersey Environmental Hazardous Substance List and/or New Jersey RTK Special Hazardous Substance List:**

15 -25%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
7 – 13%	Aluminum	7429-90-5

#### **California Prop. 65:**

# SAFETY DATA SHEET

Part No.: ECO.APC.A.55

DATE: April 28, 2014  
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## PRODUCT NAME: EcoTite APC Iso

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

### Risk Phrases

- 36/37/38 Irritating to eyes, respiratory system and skin
- 42/43 May cause sensitization by inhalation and skin contact
- 45 May cause cancer
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- 65 Harmful: May cause lung damage if swallowed

### Safety Phrases:

- 2 Keep out of the reach of children
- 9 Keep container in a well-ventilated place
- 13 Keep away from food, drink and animal feeding stuffs
- 16 Keep away from sources of ignition – No Smoking
- 20 When using do not eat or drink
- 23 Do not breathe fumes / aerosol
- 24/25 Avoid contact with skin and eyes
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- 28 After contact with skin, wash immediately with plenty of soap and water
- 29/56 Do not empty into drains, dispose of this material and its container as hazardous or special waste collection point
- 33 Take precautionary measures against static discharges
- 37/39 Wear suitable gloves and eye/face protection
- 43 In case of fires, use sand, carbon dioxide or powdered extinguishing agent.
- 44 In case of accident or if you feel unwell, seek medical advice immediately (show the label Where possible)
- 53 Avoid exposure – obtain special instructions before use
- 63 In case of accident by inhalation: remove casualty to fresh air and keep at rest

**Special labeling of certain preparations:** Contains isocyanates. See information supplied by the manufacturer.

### National Regulations:

**Water Hazard Class:** Water hazard class 2 (Self-assessment): hazardous for water

## SECTION 16 – OTHER INFORMATION

### NFPA 704M Rating

Health	2
Flammability	1
Reactivity	1
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

### HMIS Rating

Health	2*
Flammability	1
Physical Hazard	1



***SAFETY DATA SHEET***

***Part No.: ECO.APC.A.55***

DATE: April 28, 2014  
SUPERSEDES: April 17, 2014

**PRODUCT NAME: EcoTite APC Iso**

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe \* = Chronic Health Hazard

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