

# SAFETY DATA SHEET

Revision Date: 14/Apr/2015

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product Identifier****Product Description:** **ATPRIME® 2A****Other means of identification****SAP ID(s):** 5582  
**Material Code:** 5582  
**Chemical Family:** Aromatic Isocyanate**Recommended use of the chemical and restrictions on use****Intended Use:** Two-Component Urethane-Based Primer System  
**Uses advised against:** No information available**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Reichhold, LLC  
Corporate Headquarters  
P.O. Box 13582  
Research Triangle Park, NC 27709  
USA  
Tel +1-919-990-7500  
Fax +1-919-767-8602**Emergency Telephone**

(Chemtrec) 1-800-424-9300

**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 (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Sub-category 1B
Skin sensitization	Sub-category 1B
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

**Label elements****Emergency Overview Statements****Danger****Hazard Statements**Fatal if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
Suspected of causing cancer  
May cause respiratory irritation  
May cause damage to organs through prolonged or repeated exposure

**Appearance** Dark brown**Physical State** Liquid**Odor** Musty**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  
 Do not breathe mist, vapors, spray  
 Use only outdoors or in a well-ventilated area  
 Wear respiratory protection  
 Wash face, hands and any exposed skin thoroughly after handling  
 In case of inadequate ventilation wear respiratory protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 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  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a POISON CENTER or doctor/physician

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****Other Information**

None known

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%	Trade Secret
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	55	
4,4'-Methylenediphenyl Diisocyanate	101-68-8	45	

### 4. FIRST AID MEASURES

**First Aid Measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get immediate medical attention.

<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Get medical attention if irritation develops or persists.
<b>Inhalation</b>	Move victim to fresh air. If breathing is difficult, give oxygen by trained personnel. If not breathing, give artificial respiration. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice.

**Most important symptoms and effects, both acute and delayed**

<b>Most Important Symptoms and Effects</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.
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**Indication of any immediate medical attention and special treatment needed**

<b>Notes to Physician</b>	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing agent suitable for type of surrounding fire

**Unsuitable Extinguishing Media**

Do not use a solid water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical**

<b>Hazardous combustion products</b>	Carbon dioxide (CO <sub>2</sub> ), Carbon monoxide, Nitrogen oxides (NO <sub>x</sub> ), Hydrogen cyanide (hydrocyanic acid)
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<b>Combustion/Explosion Hazards</b>	Closed containers may rupture when exposed to extreme heat.
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**Protective Equipment and Precautions for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Reaction between water or foam and hot isocyanate can be vigorous. Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

<b>Personal Precautions</b>	Evacuate personnel to safe areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.
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**Environmental Precautions**

<b>Environmental Precautions</b>	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
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**Methods and material for containment and cleaning up**

<b>Methods for Containment</b>	Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).
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<b>Methods for Clean-up</b>	Soak up with inert absorbent material. Shovel into suitable container for disposal. Neutralize small spills with decontaminant. Remove from surface water (e.g. by skimming or siphoning). Retain all contaminated water or flushing liquid for disposal or for treatment prior to release.
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## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

**Handling** Do not breathe vapor or mist. Ensure adequate ventilation. Avoid contact with eyes, skin and clothing. Wear personal protective equipment. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not reseal contaminated containers.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure limits

#### **Isocyanic acid, polymethylenepolyphenylene ester (CAS #: 9016-87-9)**

Canada - Alberta OELs	0.005 ppm TWA
	0.07 mg/m <sup>3</sup> TWA

#### **4,4'-Methylenediphenyl Diisocyanate (CAS #: 101-68-8)**

ACGIH TLV	0.005 ppm TWA
OSHA PEL	0.02 ppm Ceiling
	0.2 mg/m <sup>3</sup> Ceiling

Canada - Alberta OELs	0.005 ppm TWA
	0.05 mg/m <sup>3</sup> TWA

Canada - Ontario OELs	0.005 ppm TWA
	0.02 ppm Ceiling

Canada - British Columbia OELs	0.005 ppm TWA
	0.01 ppm Ceiling

NIOSH IDLH	75 mg/m <sup>3</sup> Immediately dangerous to life or health IDLH
Mexico OEL	0.02 ppm TWA

	0.2 mg/m <sup>3</sup> TWA
	0.005 ppm TWA
	0.051 mg/m <sup>3</sup> TWA

### Appropriate engineering controls

**Engineering Controls** Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations.

### Individual protection measures, such as personal protective equipment

**Eye/face Protection** Tight sealing safety goggles. If splashes are likely to occur: Face-shield. Ensure that eyewash stations and safety showers are close to the workstation location.

**Skin Protection** Wear chemical resistant gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

**Respiratory Protection** None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Where airborne concentrations may exceed exposure limits in Section 8, wear an approved air-purifying respirator with organic vapor cartridges and a HEPA (P100) particulate filter along with a cartridge change-out schedule developed in accordance with applicable respiratory protection standards. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection

**General Hygiene Considerations** Wash hands and face before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Dark brown
<b>Odor</b>	Musty
<b>Odor Threshold</b>	No information available
<b>Physical State</b>	Liquid
<b>pH</b>	No information available
<b>Flash Point</b>	230 °C / 446 °F
<b>Flash Point Method:</b>	Closed cup
<b>Autoignition Temperature</b>	> 600°C / > 1112°F
<b>Boiling point / boiling range</b>	341°C / 646°F
<b>Melting point / Freezing point</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Lower</b>	No information available
<b>Upper</b>	No information available
<b>Specific Gravity</b>	1.23 @ 25°C
<b>Solubility</b>	Insoluble (Water)
<b>Evaporation Rate</b>	No information available
<b>Vapor Pressure</b>	No information available
<b>Vapor Density</b>	8.5 (Air = 1.0)
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available
<b>Percent Volatile, wt.%</b>	No information available
<b>VOC Content:</b>	No information available
<b>Viscosity</b>	180 - 240 cps @ 25°C
<b>Partition Coefficient (n-octanol/water)</b>	No information available
<b>Decomposition temperature</b>	No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical Stability

Stable under normal conditions. Preparation reacts slowly with water resulting in evolution of CO<sub>2</sub>.

### Possibility of Hazardous Reactions

**Hazardous Polymerization** Polymerization may occur at elevated temperatures in the presence of alkalies, amines and metal compounds.

### Conditions to Avoid

Contamination by those materials referred to under Incompatible materials. Avoid high temperatures.

### Incompatible materials

Water. Amines. Alcohols. Bases. Acids.

### Hazardous Decomposition Products

Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrocarbons. Hydrogen cyanide (hydrocyanic acid).

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Primary Routes of Entry** Skin Contact, Inhalation, Eye contact

### Acute toxicity

Isocyanic acid, polymethylenepolyphenylene ester

<b>Dermal LD50</b>	> 9400 mg/kg (Rabbit)
<b>4,4'-Methylenediphenyl Diisocyanate</b>	
<b>Oral LD50</b>	= 9200 mg/kg (Rat)

### Information on toxicological effects

**Symptoms** Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with 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 may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

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

<b>Eyes</b>	Moderately irritating to the eyes.
<b>Skin</b>	May cause sensitization by skin contact. Moderately irritating to the skin.
<b>Inhalation</b>	Harmful by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization by inhalation.
<b>Ingestion</b>	Ingestion (swallowing) may irritate the mouth, throat and stomach. May cause damage to gastrointestinal tract.
<b>Sensitization</b>	May cause sensitization by inhalation and skin contact.
<b>Repeated dose toxicity</b>	Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.
<b>Mutagenic effects</b>	No information available.
<b>Carcinogenicity</b>	.

#### Isocyanic acid, polymethylenepolyphenylene ester

IARC Group 3 - The agent is not classifiable as to its carcinogenicity to humans

#### 4,4'-Methylenediphenyl Diisocyanate

IARC Group 3 - The agent is not classifiable as to its carcinogenicity to humans

<b>Legend</b>	<i>IARC - International Agency for Research on Cancer</i>
<b>Reproductive Toxicity</b>	No information available.
<b>Neurological Effects</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ(s)</b>	Lungs, Respiratory system, Skin, Eyes.
<b>Aspiration Hazard</b>	No information available.

### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

<b>ATEmix (oral)</b>	16629 mg/kg
<b>ATEmix (dermal)</b>	17091 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	0.1 mg/L

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### 4,4'-Methylenediphenyl Diisocyanate

Fish LC50 (Fish) > 1000 mg/L (96h)

### Persistence/Degradability

Immiscible in water. Reacts with water to form inert and non-biodegradable solids.

### Bioaccumulation

No information available.

### Other adverse effects

No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### Disposal Considerations

NOT A RCRA HAZARDOUS WASTE: When discarded in its purchased form, this material would not be regulated as a RCRA Hazardous waste under 40 CFR 261. The product should not be allowed to enter drains, water courses or the soil.

#### Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

#### US EPA Waste Number

Not applicable.

## 14. TRANSPORT INFORMATION

### DOT

Proper Shipping Name NOT REGULATED

### TDG

Proper Shipping Name NOT REGULATED

### MEX

Proper Shipping Name NOT REGULATED

### IATA

Proper Shipping Name NOT REGULATED

### IMDG/IMO

Proper Shipping Name NOT REGULATED

## 15. REGULATORY INFORMATION

### International Inventories

**TSCA Inventory Status:** All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.

**Canadian Inventory Status:** All components of this material are listed on the Canadian Domestic Substances List (DSL)

**Australian Inventory Status:** This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances

**Korean Inventory Status:** This product contains only chemicals which are currently listed on the Korean Chemical Substances List

<b>Philippine Inventory:</b>	This product contains only chemicals that are currently listed on the Philippine Inventory of Chemicals and Chemical Substances
<b>Japan ENCS:</b>	This product contains only chemicals that are currently listed on the Japanese Inventory of Existing and New Chemical Substances
<b>Chinese IECS:</b>	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances
<b>New Zealand Inventory:</b>	This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals

### US Federal Regulations

#### **TSCA 12(b) - Export Notification:**

This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

#### **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 Title 40 of the Code of Federal Regulations, Part 372:

Component	CAS No	Weight-%	SARA 313 Status
4,4'-Methylenediphenyl Diisocyanate	101-68-8	45	Listed

#### **SARA 311/312 Hazardous Categorization**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	Yes

#### **Clean Water Act**

This product does not contain any listed substances

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

This product contains the following HAPs:

Component	CAS No	Weight-%	HAPS data
4,4'-Methylenediphenyl Diisocyanate	101-68-8	45	

#### **CERCLA**

This product contains the following reportable quantities:

Component	40 CFR 302.4 RQ	40 CFR 355 EHS TPQs
4,4'-Methylenediphenyl Diisocyanate	5000 lb 2270 kg	

### State Regulations

#### **California Proposition 65**

This product is not known to contain any chemicals listed by the State of California (Safe Drinking Water and Toxic Enforcement Act of 1986) to cause cancer or reproductive toxicity.

#### **Canada**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

## 16. OTHER INFORMATION



**NFPA Rating****Health 2****Flammability 1****Instability 1****Prepared By**Reichhold Product Regulatory Department  
Phone Number: 919-990-7500**Revision Date:**

14/Apr/2015

**Revision Summary:**This data sheet contains changes from the previous version in section(s):  
1**Former date:**

9 September 2014

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**End of Safety Data Sheet**

# SAFETY DATA SHEET

Revision Date: 14/Apr/2015

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product Identifier****Product Description:** **ATPRIME® 2B****Other means of identification****SAP ID(s):** 5579 ; 5580  
**Material Code:** 5579  
**Chemical Family:** Polyester Resin**Recommended use of the chemical and restrictions on use****Intended Use:** Two-Component Urethane-Based Primer System  
**Uses advised against:** No information available**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Reichhold, LLC  
Corporate Headquarters  
P.O. Box 13582  
Research Triangle Park, NC 27709  
USA  
Tel +1-919-990-7500  
Fax +1-919-767-8602**Emergency Telephone**

(Chemtrec) 1-800-424-9300

**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
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Sub-category 1B
Carcinogenicity	Sub-category 1B
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 3
Flammable liquids	Category 3

**Label elements****Emergency Overview Statements****Danger****Hazard Statements**Harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction  
May cause cancer  
May cause respiratory irritation  
Causes damage to hearing through prolonged or repeated exposure if inhaled  
Harmful to aquatic life with long lasting effects  
Flammable liquid and vapor

**Appearance** Pink - Clear**Physical State** Liquid**Odor** Pungent**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  
 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  
 Contaminated work clothing should not be allowed out of the workplace  
 Do not breathe mist, vapors, spray  
 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 explosion-proof electrical/ventilating/lighting equipment  
 Use only non-sparking tools  
 Take precautionary measures against static discharge  
 Keep cool  
 Avoid release to the environment

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 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 skin irritation or rash occurs: Get medical advice/attention  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 If skin irritation occurs: Get medical advice/attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container to industrial incineration plant  
 Dispose of in accordance with federal, state and local regulations

**Hazards not otherwise classified (HNOC)****Other Information**

Unknown acute toxicity 44.9% of the mixture consists of ingredient(s) of unknown toxicity.  
 Unknown aquatic toxicity 51.3% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%	Trade Secret
Styrene	100-42-5	49.0	
Polyester Resin	Proprietary	45.0	

Methyl methacrylate	80-62-6	5 - 7	
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If CAS number is "proprietary", the specific chemical identity has been withheld as a trade secret.

#### 4. FIRST AID MEASURES

##### First Aid Measures

<b>Eye Contact</b>	Immediately flush eyes for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.
<b>Inhalation</b>	Remove person to fresh air. If signs/symptoms continue, get medical attention. Keep patient warm and at rest. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Get medical attention immediately.
<b>Ingestion</b>	Do not induce vomiting. Potential for aspiration if swallowed. This material may enter the lungs during vomiting. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION.

##### Most important symptoms and effects, both acute and delayed

<b>Most Important Symptoms and Effects</b>	No information available.
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##### Indication of any immediate medical attention and special treatment needed

<b>Notes to Physician</b>	Treat symptomatically.
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#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Carbon dioxide (CO<sub>2</sub>), Foam, Dry chemical, Water spray

##### Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

##### Specific hazards arising from the chemical

<b>Hazardous combustion products</b>	Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases
<b>Combustion/Explosion Hazards</b>	Flammable. Vapors may form explosive mixture with air. Flash back possible over considerable distance. This material may polymerize (react) when its container is exposed to heat (as during a fire). This polymerization increases pressure inside a closed container and may result in the violent rupture of the container. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death.

##### Protective Equipment and Precautions for Firefighters:

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective equipment after use. Evacuate all persons from the fire area to a safe location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazard while extinguishing the blaze. DO NOT extinguish a fire resulting from the flow of this flammable liquid until the flow of liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished. Use water spray to cool fire-exposed containers.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Remove all sources of ignition. Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental Precautions**

**Environmental Precautions** Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).

**Methods for Clean-up** Soak up with inert absorbent material. Remove from surface water (e.g. by skimming or siphoning). Dispose of contaminated material as waste according to item 13.

**7. HANDLING AND STORAGE****Precautions for Safe Handling**

**Handling** Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed.

**Conditions for safe storage, including any incompatibilities**

**Storage** Keep away from heat and sources of ignition. No smoking. Keep away from direct sunlight. Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 77°F (25°C).

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Exposure limits**

Components with workplace control parameters

**Styrene (CAS #: 100-42-5)**

ACGIH TLV

20 ppm TWA  
40 ppm STEL  
A4 Not Classifiable as a Human Carcinogen  
100 ppm TWA  
200 ppm Ceiling

OSHA PEL

Industry PEL

While the federal workplace exposure limit for styrene is 100 ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8 hour TWA and a Short Term Exposure Limit (STEL) of 100 ppm, 15 minute exposure.

Canada - Alberta OELs	40 ppm STEL 170 mg/m <sup>3</sup> STEL 20 ppm TWA
Canada - Ontario OELs	85 mg/m <sup>3</sup> TWA 35 ppm TWA 100 ppm STEL
Canada - British Columbia OELs	50 ppm TWA 75 ppm STEL
NIOSH IDLH	700 ppm Immediately dangerous to life or health IDLH
Mexico OEL	100 ppm STEL 425 mg/m <sup>3</sup> STEL 50 ppm TWA 215 mg/m <sup>3</sup> TWA (skin)
<b>Methyl methacrylate (CAS #: 80-62-6)</b>	
ACGIH TLV	50 ppm TWA 100 ppm STEL A4 Not Classifiable as a Human Carcinogen Sensitizer
OSHA PEL	100 ppm TWA 410 mg/m <sup>3</sup> TWA
Canada - Alberta OELs	100 ppm STEL 410 mg/m <sup>3</sup> STEL 50 ppm TWA 205 mg/m <sup>3</sup> TWA
Canada - Ontario OELs	50 ppm TWA 100 ppm STEL
Canada - British Columbia OELs	50 ppm TWA 100 ppm STEL
NIOSH IDLH	1000 ppm Immediately dangerous to life or health IDLH
Mexico OEL	125 ppm STEL 510 mg/m <sup>3</sup> STEL 100 ppm TWA 410 mg/m <sup>3</sup> TWA

**Legend***ACGIH (American Conference of Governmental Industrial Hygienists)**TLV® (Threshold Limit Value)**TWA (time-weighted average)**STEL - Short Term Exposure Limit**OSHA - Occupational Safety and Health Administration**PEL - Permissible Exposure Limit**OEL - Occupational Exposure Limit**NIOSH - National Institute for Occupational Safety and Health**IDLH - Immediately Dangerous to Life or Health**SKIN: Skin Absorption***Appropriate engineering controls****Engineering Controls**

Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations. Use explosion-proof equipment.

**Individual protection measures, such as personal protective equipment****Eye/face Protection**

Safety glasses with side-shields. If splashes are likely to occur: Tight sealing safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.

<b>Skin Protection</b>	Wear protective nitrile rubber or Viton™ gloves. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Impervious clothing. Rubber or plastic boots.
<b>Respiratory Protection</b>	None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Pink - Clear
<b>Odor</b>	Pungent
<b>Odor Threshold</b>	0.2 ppm (Styrene) 0.05 - 0.21 ppm (Methyl Methacrylate)
<b>Physical State</b>	Liquid
<b>pH</b>	No information available
<b>Flash Point</b>	26 °C / 79 °F
<b>Flash Point Method:</b>	Seta closed cup
<b>Autoignition Temperature</b>	806°F - 914°F / 430°C - 490°C
<b>Boiling point / boiling range</b>	212°F - 295°F / 100°C - 146°C
<b>Melting point / Freezing point</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Lower</b>	1.1%
<b>Upper</b>	12.5%
<b>Specific Gravity</b>	0.98 - 1.03 @ 25°C
<b>Solubility</b>	Insoluble (Water)
<b>Evaporation Rate</b>	0.49 - 3.1 (BuAc = 1)
<b>Vapor Pressure</b>	6.12 - 20 mmHg @ 68°F/20°C
<b>Vapor Density</b>	3.45 - 3.6 (Air = 1)
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available
<b>Percent Volatile, wt.%</b>	53 - 57 % by weight
<b>VOC Content:</b>	553 g/l (calculated) product as supplied
<b>Viscosity</b>	200 - 300 cps @ 25°C
<b>Partition Coefficient (n-octanol/water)</b>	No information available
<b>Decomposition temperature</b>	No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical Stability

Stable under normal conditions. Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

#### **Hazardous Polymerization**

Polymerization can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Product will undergo hazardous polymerization at temperatures above 150 F (65 C).

**Conditions to Avoid**

Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials.

**Incompatible materials**

Strong acids. Strong oxidizing agents. Metal salts. Polymerization catalysts. Amines. Halogenated compounds.

**Hazardous Decomposition Products**

Hydrocarbons. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**11. TOXICOLOGICAL INFORMATION**
**Information on likely routes of exposure**

**Primary Routes of Entry** Eye contact, Ingestion, Inhalation, Skin Contact, Skin absorption

**Acute toxicity****Styrene**

Oral LD50 = 5000 mg/kg (Rat)  
 Dermal LD50 > 2000 mg/kg (Rat)  
 Inhalation LC50 = 11.8 mg/l (4 H) (Rat)

**Methyl methacrylate**

Oral LD50 = 7872 mg/kg (Rat)

**Information on toxicological effects**

**Symptoms** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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

**Eyes** Irritating to eyes.

**Skin** Harmful by skin absorption. Contact causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis. May cause sensitisation by skin contact.

**Inhalation** Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause CNS-depression and narcosis.

**Ingestion** Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. Ingestion is not an anticipated route of exposure for this material in industrial use.

**Sensitization** Contains methacrylates, which are known to be weak sensitizers.

**Repeated dose toxicity** In humans, styrene may cause a transient decrease in color discrimination and effects on hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the kidneys, liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.

**Mutagenic effects** Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation.

**Carcinogenicity****Styrene**

<b>ACGIH</b>	Group A4 - Not classifiable as a human carcinogen.
<b>IARC</b>	Group 2B - Possibly Carcinogenic to Humans
<b>NTP</b>	Reasonably anticipated to be human carcinogen

**Legend**

*IARC - International Agency for Research on Cancer*  
*NTP - National Toxicology Program*



<b>Reproductive Toxicity</b>	No information available.
<b>Neurological Effects</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ(s)</b>	Liver, Kidney, Central nervous system (CNS), Respiratory system.
<b>Aspiration Hazard</b>	No information available.

#### **Numerical measures of toxicity - Product Information**

**Unknown acute toxicity** 44.9% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document .

<b>ATEmix (oral)</b>	5239 mg/kg
<b>ATEmix (dermal)</b>	2154 mg/kg
<b>ATEmix (inhalation-vapor)</b>	12.7 mg/L

## **12. ECOLOGICAL INFORMATION**

### **Ecotoxicity**

#### **Styrene**

Log Kow	2.95
Bioconcentration factor (BCF)	74
Algae	EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h) EC50 0.46 - 4.3 mg/L (Pseudokirchneriella subcapitata) (72h)
Fish	LC50 3.24 - 4.99 mg/L (Pimephales promelas) (96 h) flow-through LC50 19.03 - 33.53 mg/L (Lepomis macrochirus) (96 h) static LC50 6.75 - 14.5 mg/L (Pimephales promelas) (96 h) static LC50 58.75 - 95.32 mg/L (Poecilia reticulata) (96 h) static
Water Flea	EC50 3.3 - 7.4 mg/L 48 h

#### **Methyl methacrylate**

Log Kow	0.7
Fish	LC50 243 - 275 mg/L (Pimephales promelas) (96 h) flow-through LC50 125.5 - 190.7 mg/L (Pimephales promelas) (96 h) static LC50 170 - 206 mg/L (Lepomis macrochirus) (96 h) flow-through LC50 153.9 - 341.8 mg/L (Lepomis macrochirus) (96 h) static LC50 > 79 mg/L (Oncorhynchus mykiss) (96 h) flow-through LC50 > 79 mg/L (Oncorhynchus mykiss) (96 h) static LC50 326.4 - 426.9 mg/L (Poecilia reticulata) (96 h) static
Water Flea	EC50 = 69 mg/L 48 h

#### **Unknown aquatic toxicity**

51.3% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

#### **Persistence/Degradability**

No information available.

#### **Bioaccumulation**

No information available.

#### **Other adverse effects**

No information available.

## **13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal Considerations** Hazardous waste. Can be incinerated, when in compliance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

**US EPA Waste Number** D001 (IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA Hazardous Waste Number D001 based on the characteristic of ignitability.

## 14. TRANSPORT INFORMATION

**DOT**

<b>UN-No</b>	UN1866
<b>Proper Shipping Name</b>	RESIN SOLUTION
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>NAERG:</b>	127

**TDG**

<b>UN-No</b>	UN1866
<b>Proper Shipping Name</b>	RESIN SOLUTION
<b>Hazard Class</b>	CLASS 3
<b>Packing Group</b>	PG III
<b>NAERG:</b>	127

**MEX**

<b>UN-No</b>	UN1866
<b>Proper Shipping Name</b>	RESIN SOLUTION
<b>Hazard Class</b>	CLASS 3
<b>Packing Group</b>	PG III
<b>NAERG:</b>	127

**IATA**

<b>UN-No</b>	UN1866
<b>Proper Shipping Name</b>	RESIN SOLUTION
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>Packing Instructions</b>	355, 366
<b>NAERG:</b>	127

**IMDG/IMO**

<b>UN-No</b>	UN1866
<b>Proper Shipping Name</b>	RESIN SOLUTION
<b>Hazard Class</b>	CLASS 3
<b>Packing Group</b>	PG III
<b>EmS-No</b>	F-E, S-E
<b>NAERG:</b>	127

## 15. REGULATORY INFORMATION

**International Inventories**

**TSCA Inventory Status:** All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.

**Canadian Inventory Status:** All components of this material are listed on the Canadian Domestic Substances List (DSL)

**Australian Inventory Status:** This product contains one or more chemicals currently not on the Australian Inventory of Chemical Substances

<b>Korean Inventory Status:</b>	This product contains only chemicals which are currently listed on the Korean Chemical Substances List
<b>Philippine Inventory:</b>	This product contains one or more chemicals currently not on the Philippine Inventory of Chemicals and Chemical Substances
<b>Japan ENCS:</b>	This product contains only chemicals that are currently listed on the Japanese Inventory of Existing and New Chemical Substances
<b>Chinese IECS:</b>	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances
<b>New Zealand Inventory:</b>	This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals

### US Federal Regulations

#### **TSCA 12(b) - Export Notification:**

This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

#### **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 Title 40 of the Code of Federal Regulations, Part 372:

Component	CAS No	Weight-%	SARA 313 Status
Styrene	100-42-5	49.0	Listed
Methyl methacrylate	80-62-6	5 - 7	Listed

#### **SARA 311/312 Hazardous Categorization**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	Yes
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	Yes

#### **Clean Water Act**

This product contains the following listed substances:

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Styrene 100-42-5	1000 lb			Listed
Methyl methacrylate 80-62-6	1000 lb			Listed

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

This product contains the following HAPs:

Component	CAS No	Weight-%	HAPS data
Styrene	100-42-5	49.0	
Methyl methacrylate	80-62-6	5 - 7	Listed

#### **CERCLA**

This product contains the following reportable quantities:

Component	40 CFR 302.4 RQ	40 CFR 355 EHS TPQs
Styrene	1000 lb 454 kg	
Methyl methacrylate	1000 lb 454 kg	

**Chemical Weapons Convention (CWC)**

This product does not contain any listed substances.

**State Regulations****California Proposition 65**

WARNING: This material contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. The California Safe Drinking Water and Toxic Enforcement Act of 1986 requires that clear and reasonable warning be given prior to exposing any person to this chemical.

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

<b>16. OTHER INFORMATION</b>
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**NFPA Rating****Health 2****Flammability 3****Instability 2****Prepared By**

Reichhold Product Regulatory Department  
Phone Number: 919-990-7500

**Revision Date:**

14/Apr/2015

**Revision Summary:**

This data sheet contains changes from the previous version in section(s):  
1

**Former date:**

24 September 2014

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**End of Safety Data Sheet**