Material Safety Data Sheet

Material Name: AVATREL® 2090P/US/Canada

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: AVATREL® 2090P

Company Identification: Promerus LLC
9921 Brecksville Road
Brecksville, OH 44141-3289
United States of America

Phone Number: 330-328-8186
Emergency Phone Number: 24 HR CHEMTREC U.S. 800-424-9300
24 HR CHEMTREC Int'l 703-527-3887

*** Section 2 - Composition / Information on Ingredients ***

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-67-8</td>
<td>1,3,5-Trimethylbenzene</td>
<td>60-90</td>
</tr>
<tr>
<td>Proprietary</td>
<td>Polyolefin</td>
<td>30-50</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following Trimethyl benzene (25551-13-7)

Component Information/Information on Non-Hazardous Components
This product has been evaluated using criteria specified in 29CFR 1910.1200 (Hazard Communication Standard)

This product has been evaluated according to the Canada's Controlled Product Regulations

Amounts specified are typical and do not represent a specification Remaining components are proprietary, non-hazardous and/or present at amounts below reportable limits

CANADA: THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE It is not known to be on the DSL/NDSL Inventories Its use is to be by or under the supervision of a technically qualified person The physical, chemical and toxicological properties of this substance have not been fully determined

*** Section 3 - Hazards Identification ***

Emergency Overview
Product is a clear yellow viscous liquid with an aromatic odor Combustible liquid This product is irritating to the eyes and skin This product may cause irritation to the respiratory system Excessive inhalation of this material causes headache, dizziness, nausea and incoordination Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury.

Target Organs
Eyes, Skin, Respiratory Tract, Gastrointestinal Tract, Central Nervous System.

Potential Health Effects: Eyes
This product is irritating to the eyes Symptoms may include reddening, itching and inflammation
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Potential Health Effects: Skin
This product is irritating to the skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

Potential Health Effects: Ingestion
Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of this product may result in central nervous system effects including headache, sleepiness, dizziness, slurred speech and blurred vision. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury.

Potential Health Effects: Inhalation
Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Repeated or prolonged exposures may cause bronchitis and laryngitis. May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Medical Conditions Aggravated by Exposure
Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

HMIS Ratings: Health: 2 Fire: 2 Physical Hazard: 0 Pers. Prot.: D
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

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**Section 4 - First Aid Measures**

First Aid: Eyes
Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

First Aid: Skin
For skin contact, wash immediately with soap and water for at least 15 minutes while removing contaminated clothing. Wash contaminated clothing before reuse. If irritation persists, get medical attention.

First Aid: Ingestion
If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Prevent aspiration of material into lungs.

First Aid: Inhalation
If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. Seek medical attention at once.

First Aid: Notes to Physician
This material, if swallowed into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

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**Section 5 - Fire Fighting Measures**

General Fire Hazards
This product is an NFPA Level II Combustible liquid.

Hot vapor or mists may be susceptible to spontaneous combustion when mixed with air. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes. Therefore, ignition may occur below published ignition temperatures. Use of this product in processes involving elevated-temperatures, vacuum if subject to sudden ingress of air, sudden escape of vapor or mist, etc. must be thoroughly evaluated to assure safe operation. Exposing closed containers to heat may cause excessive pressure resulting in explosive rupture.

Hazardous Combustion Products
Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Extinguishing Media
Dry chemical, foam, carbon dioxide. Use water to cool fire-exposed containers and to protect personnel.
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Material Name: AVATREL® 2090P/US/Canada

Fire Fighting Equipment/Instructions
Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire. Wear protective clothing ensemble as defined in NFPA 1500 (1997 or as updated)

NFPA Ratings: Health: 2 Fire: 2 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures
Clean up spills immediately, observing precautions in the Personal Protective Equipment (Section 8). Stop the flow of material, if this is without risk. Block any potential routes to water systems. Remove sources of ignition. Use spark proof tools. Provide adequate ventilation.

Clean-Up Procedures
Combustible liquid. Eliminate all ignition sources. Ventilate the area. If spill is large, be prepared to isolate the hazard area. Deny access to the spill area to persons who are not involved in the cleanup and/or who have not been properly trained in spill management of hazardous/combustible liquids. Absorb spill with inert material. Shovel material into appropriate container for disposal. Put material in suitable, covered, labeled containers. Ventilate the contaminated area.

Evacuation Procedures
Isolate area. Keep unnecessary personnel away.

Special Procedures
Wear appropriate personal protective equipment.

*** Section 7 - Handling and Storage ***

Handling Procedures
This product is photosensitive and should be handled only under yellow light conditions. Avoid contact with skin and eyes. Avoid prolonged or repeated skin contact with this material. Avoid breathing vapors or mists of this product. Use this product with adequate ventilation. Keep away from heat, sparks, flames and direct sunlight. DO NOT cut, puncture or weld on or near this container. Do not apply pressure to this container. Containers should be bonded and grounded during transfer of material. Wash thoroughly after handling.

Storage Procedures
Store in a cool, dry, and well-ventilated area. Store in combustible storage area and away from heat and open flame. Avoid storing containers in direct sunlight as vapors may accumulate in the head space creating pressure. Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Keep container upright, when not in use, to prevent leakage. Open containers carefully and slowly. Emptied container may contain residual vapors or liquid which may ignite or explode. Do not use empty container without commercial cleaning or reconditioning.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines
A: General Product Information
Keep all exposures to a minimum.
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Material Name: AVATREL® 2090P/US/Canada

Document: AVA2090P

B: Component Exposure Limits

1,3,5-Trimethylbenzene (108-67-8)

ACGIH 25 ppm TWA (related to Trimethyl benzene (mixed isomers))
OSHA (Vacated) 25 ppm TWA, 125 mg/m³ TWA (related to Trimethyl benzene)
NIOSH 25 ppm TWA, 125 mg/m³ TWA
Albarta 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene (mixed isomers))
British Columbia 25 ppm TWA (related to Trimethyl benzene (mixed isomers))
Manitoba 25 ppm TWA, 125 mg/m³ TWA (related to Trimethyl benzene)
New Brunswick 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene)
NW Territories 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene)
Nova Scotia 25 ppm TWA (related to Trimethyl benzene (mixed isomers))
Nunavut 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene)
Ontario 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene (sum of isomers))
Quebec 25 ppm TWA, 123 mg/m³ TWA (related to Trimethyl benzene)

Engineering Controls
Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face
Wear chemical goggles, add face shield (if splashing is possible)

Personal Protective Equipment: Skin
Use chemical resistant protective clothing

Personal Protective Equipment: Respiratory
If ventilation is not sufficient to effectively prevent buildup of aerosols or mists, appropriate NIOSH approved respiratory protection must be provided. Use respiratory protection in accordance with your company's respiratory protection program, local regulations or OSHA regulations under 29 CFR 1910.134

Personal Protective Equipment: General
Eye wash fountain and emergency showers are recommended

*** Section 9 - Physical & Chemical Properties ***

Appearance: Clear yellow
Physical State: Viscous liquid
Vapor Pressure: 2.49 mmHg @ 25°C (Trimethylbenzene)
Boiling Point: 162°C-164°C (323.6°F-327 2°F) (Trimethylbenzene)
Solubility (H2O): Not determined
Flash Point: 44°C (111°F)
Auto Ignition: 187°F (102°C)
UFL: 6.1 % AT 212°F (100°C)
Viscosity: 10000-20000 cps @ 25°C
VOC: 50% 90%
Odor: Aromatic
pH: Not determined
Vapor Density: 4.1
Melting Point: Not applicable
Specific Gravity: Not available
Flash Point Method: TCC
LFL: 0.9 % AT 212°F (100°C)
Evaporation Rate: <1
Percent Volatile: 50%-90%
Octanol/H2O Coeff.: Not available

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability
This material is photosensitive and should be handled only under yellow light.
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Material Name: AVATREL® 2090P/US/Canada

Conditions to Avoid
- Keep away from light (other than yellow light), heat, ignition sources and incompatible materials

Incompatibility
- This product may react with oxidizing agents. This material is photosensitive

Hazardous Decomposition
- Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons

Hazardous Polymerization
- Will not occur

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity
A: General Product Information
- This product contains trimethylbenzene, which is a skin and respiratory irritant. Inhalation of vapors can cause CNS depression including headache, nausea, dizziness and incoordination. Trimethylbenzene is an aspiration hazard. Aspiration of the liquid into the lungs may cause chemical pneumonitis.

1,3,5-trimethylbenzene is a skin irritant. Vapor concentrations in excess of 5,000 ppm can cause central nervous system depression. Human exposures have been reported to cause feelings of anxiety along with asthmatic bronchitis.

B: Component Analysis - LD50/LC50
- 1,3,5-Trimethylbenzene (108-67-8)
  - Test & Species
  - Data
  - Inhalation LC50 Rat
  - 24 g/m3/4H

Carcinogenicity
A: General Product Information
- No information available for the product.

B: Component Carcinogenicity
- None of the components in Section 2 are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Chronic Toxicity
- 1,3,5-trimethylbenzene can produce chronic asthmatic-like bronchitis which may be delayed or chronic. Future exposures may result in asthma attacks with wheezing, coughing and chest tightness. Severe reactions may produce respiratory collapse and even death.

*** Section 12 - Ecological Information ***

Ecotoxicity
A: General Product Information
- If exposed to light, photodegradation of polymer component is presumed to be a removal mechanism. No additional information available.

B: Component Analysis
- 1,3,5-Trimethylbenzene (108-67-8)
  - Environmental: According to a classification scheme, BCF values of 23 to 342, measured in carp suggest that bioconcentration in aquatic organisms may occur. Biodegradation may be an important fate process for this compound in water. Acclimatization may increase the rate of biodegradation.
Material Safety Data Sheet

Material Name: AVATREL® 2090P/US/Canada

Document: AVA2090P

C: Component Analysis - Ecotoxicity - Aquatic Toxicity

1,3,5-Trimethylbenzene (108-67-8)

<table>
<thead>
<tr>
<th>Test &amp; Species</th>
<th>Data Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>3.48 mg/L</td>
</tr>
<tr>
<td>24 Hr EC50 water flea</td>
<td>50 mg/L</td>
</tr>
</tbody>
</table>

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

If discarded, this product is considered a RCRA ignitable waste, D001. Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

Disposal Instructions

Dispose of waste by incineration, in accordance with local regulations and available facilities. Liquids cannot be disposed of in a landfill.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN/NA #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): FLAMMABLE LIQUID

TDG Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN/NA #: UN2325  Hazard Class: 3  Packing Group: III

ICAO Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): Flammable Liquid

IATA Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): Flammable Liquid

ADR Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): Flammable Liquid

RID Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): Flammable Liquid

IMDG Information

Shipping Name: 1,3,5-Trimethylbenzene Mixture
UN #: UN2325  Hazard Class: 3  Packing Group: III
Required Label(s): Flammable Liquid
Material Safety Data Sheet

Material Name: AVATREL® 2090P/US/Canada

*** Section 15 - Regulatory Information ***

Additional Regulatory Information
A: General Product Information

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (e.g., polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

The cyclic olefin polymer in this product meets the requirements of the TSCA Polymer Exemption.

CANADA: THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE. It is not known to be on the DSL/INNDSL inventories. Its use is to be by or under the supervision of a technically qualified person. The physical, chemical and toxicological properties of this substance have not been fully determined.

B: Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
<th>Canada</th>
<th>EU</th>
<th>METI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>106-87-8</td>
<td>Yes</td>
<td>DS!</td>
<td>EINECS</td>
<td>Yes</td>
</tr>
</tbody>
</table>

US Federal Regulations
A: General Product Information

This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above the de minimis quantities) of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 372.

This product contains a chemical or chemicals that require Export Notification.

B: Component Analysis

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A) SARA Section 311 (40 CFR 372.65) or CERCLA (40 CFR 302.4).

SARA 311/312 - Acute Health: Yes Chronic Health: Yes Fire: Yes Pressure: No Reactive: No

State Regulations
A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3,5-Trimethylbenzene (related to Trimethyl benzene)</td>
<td>106-87-8</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Canadian WHMIS Information

A: General Product Information

WHMIS CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F)

WHMIS CLASS D2B: Material causing other toxic effects

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>106-87-8</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

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Issue Date: 03/08/06 Revision: 2.0000
**Section 16 - Other Information**

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if or where additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

**Key/Legend**

ACGIH: American Conference of Governmental Industrial Hygienists  
A1: Confirmed human carcinogen  
A2: Suspected human carcinogen  
A3: Animal carcinogen  
DSL: Canadian Domestic Substances List  
CAS No: Chemical Abstract Service Registry Number  
EEC: European Economic Community  
IARC: International Agency for Research on Cancer  
Group 1: Carcinogenic to humans  
Group 2A: Probably carcinogenic to humans  
Group 2B: Possibly carcinogenic to humans  
Group 3: Unclassifiable as a carcinogen to humans  
LVE: Low Volume Exemption  
MSHA: Mine Safety and Health Administration  
NIOSH: National Institute for Occupational Safety and Health  
NDSL: Non-Domestic Substances List  
NTP: National Toxicology Program  
N/A: Not Applicable  
N/E: None Established  
OSHA: Occupational Safety and Health Administration  
PEL: Permissible Exposure Limit  
PNOC: Particulates Not Otherwise Classified  
RTK: Right To Know  
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)  
TLV: Threshold Limit Value  
C: Ceiling limit  
S: Skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route including mucous membranes and the eyes and by direct skin contact with the substance  
WEEL: Workplace Environmental Exposure Level  
WHMIS: Canadian Workplace Hazardous Materials Information System