



BA Electronics  
9/05

## Material Safety Data Sheet

Material Name: Avatrel 2585P Photodefinable Polymer/US/Japan

Document: AVA2585P

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

Chemical Name AVATREL 2585P Photodefinable Polymer

**Company Identification:**

Promerus LLC  
9921 Brecksville Road  
Brecksville, OH 44141-3289  
United States of America  
330-328-8186  
1-888-211-4441

Phone Number:

Emergency Phone Number:

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

CAS #	Component	Percent
110-43-0	2-Heptanone	55-65
Not Available	Cyclic olefin polymer	30-50
91-17-8	Decahydronaphthalene	0-33
Proprietary	Additive 1	1.5-3
Proprietary	Additive 2	1.5-3
Proprietary	Additive 3	0.01-1.0

#### Component Information/Information on Non-Hazardous Components

This product has been evaluated using criteria specified in 29CFR 1910.1200 (Hazard Communication Standard).

Japan: This Safety Data Sheet has been prepared in compliance with JIS Z7250.

THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE. It is not known to be on the TSCA, DSL/NDSL, or METI Inventories and cannot be distributed by itself or as part of another product in commerce. 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 colorless liquid with a fruity to turpentine 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. May be harmful if absorbed through the skin. Small amounts of this product, if aspirated into the lungs, may cause mild to severe pulmonary injury. May form peroxides during prolonged storage. May cause skin sensitization.

#### Target Organs

Eyes, Skin, Central Nervous System, Nerves, Liver, Kidney.

#### Potential Health Effects: Eyes

This product is irritating to the eyes. Symptoms may include reddening, itching and inflammation.

#### Potential Health Effects: Skin

This product is irritating to the skin. Symptoms may include redness, edema, drying, defatting and cracking of the skin. This product may be absorbed through the skin and cause harm. May cause skin sensitization.

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### 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-headedness, 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. Liver and nervous system disorders may be aggravated by exposure to this product.

HMIS Ratings: Health: 2\* Fire: 2 Physical Hazard: 1 Pers. Prot.: D

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## \*\*\* 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. 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. If symptoms persist, get medical attention.

### First Aid: Notes to Physician

This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

Flash Point: 105.8°F (41°C) (2-Heptanone);

135°F (57°C) (Decahydronaphthalene)

Upper Flammable Limit (UFL): 7.9 % (2-Heptanone);

4.9% @100°C (Decahydronaphthalene)

Auto Ignition: 739°F (393°C) (2-Heptanone);

482°F (250°C) (Decahydronaphthalene)

Rate of Burning: Not determined

Method Used: Not available

Lower Flammable Limit (LFL): 1.11% (2-Heptanone);

0.7% @ 100°C (Decahydronaphthalene)

Flammability Classification: NFPA Level II Combustible

### 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.



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### 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.

### 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: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Prevent flow into public sewer (explosion hazard), streams or other water systems. Clean up spills immediately. Wear proper personal protective clothing and equipment. Remove sources of ignition. Use spark proof tools. Ventilate the area.

### Clean-Up Procedures

Combustible liquid. Eliminate all ignition sources. Ventilate the contaminated 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/flammable liquids. Absorb spill with inert material. Shovel material into appropriate container for disposal. Put material in suitable, covered, labeled containers.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

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. This product is photosensitive. Please handle only under yellow light conditions. 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. Decahydronaphthalene may form explosive peroxides. Avoid contact with light. Monitor inhibitor content. Do not evaporate or distill to dryness. Keep in dark. Store between 0°C and 5°C. 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 reuse 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.

#### B: Component Exposure Limits

##### 2-Heptanone (110-43-0)

ACGIH: 50 ppm TWA

OSHA: 100 ppm TWA; 465 mg/m<sup>3</sup> TWA

NIOSH: 100 ppm TWA; 465 mg/m<sup>3</sup> TWA

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### Additive 3 (Proprietary)

ACGIH: 5 mg/m<sup>3</sup> TWA  
skin - potential for cutaneous absorption  
OSHA: 5 mg/m<sup>3</sup> TWA  
Prevent or reduce skin absorption  
NIOSH: 5 mg/m<sup>3</sup> TWA  
Potential for dermal absorption

### 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 \*\*\*

<b>Appearance:</b> Colorless liquid	<b>Odor:</b> Fruity to turpentine
<b>Physical State:</b> Liquid	<b>pH:</b> Not available
<b>Vapor Pressure:</b> 2.6 mmHg @ 20°C (68°F) (2-Heptanone); 1.00 mmHg @ 22.7°C (73°F) (Decahydronaphthalene)	<b>Vapor Density:</b> 3.9 (2-Heptanone); 4.76 (Decahydronaphthalene)
<b>Boiling Point:</b> 149-150°C (300-302°F) (2-Heptanone); 193°C (379°F) (Decahydronaphthalene)	<b>Melting Point:</b> -35°C (-31°F) (2-Heptanone); -43°C (-45.4°F) (Decahydronaphthalene)
<b>Solubility (H<sub>2</sub>O):</b> Not soluble	<b>Specific Gravity:</b> 0.815 (2-Heptanone); 0.896 (Decahydronaphthalene)
<b>Viscosity:</b> 3 mPa @ 20°C (68°F)	

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

### Chemical Stability

Stable under normal temperatures and pressures. May form explosive peroxides.

### Chemical Stability: Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials. Avoid prolonged storage or contact with air, light or storage and use above room temperature.

### Incompatibility

Strong acids, strong bases and oxidizing agents.

### Hazardous Decomposition

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

### Hazardous Polymerization

Will not occur.



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### \*\*\* Section 11 - Toxicological Information \*\*\*

#### Acute and Chronic Toxicity

##### A: General Product Information

No toxicity studies have been conducted on this product. As with all chemicals for which test data are limited or do not exist, caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

##### B: Component Analysis

###### Decahydronaphthalene (91-17-8)

Inhalation, rat: LC50 = 710 ppm/4H;

Oral, rat: LD50 = 4170 mg/kg;

Skin, rabbit: LD50 = 5900 uL/kg.

###### Carcinogenicity:

CAS# 91-17-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information present.

Teratogenicity: No information present.

Reproductive Effects: No information present.

Neurotoxicity: No information present.

Mutagenicity: No information present.

Other Studies: Has caused kidney and endocrine tumors in experimental animals. In guinea pigs, vapor exposure caused cataracts and kidney lesions.

#### ACUTE EFFECTS

CAUSES SKIN IRRITATION.

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

CAUSES EYE IRRITATION.

HARMFUL IF INHALED.

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

MAY BE HARMFUL IF SWALLOWED.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

#### CHRONIC EFFECTS

TARGET ORGAN(S):

LIVER

KIDNEYS

#### TOXICITY DATA

ORL-RAT LD50: 4170 MG/KG

IHL-RAT LC50: 710 PPM/4H

SKN-RBT LD50: 5900 U/L/KG

#### TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (OTHER OLFACTION EFFECTS)

SENSE ORGANS AND SPECIAL SENSES (CONJUNCTIVA IRRITATION)

LUNGS, THORAX OR RESPIRATION (CHRONIC PULMONARY EDEMA OR CONGESTION)

LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)

LIVER (OTHER CHANGES)

KIDNEY, URETER, BLADDER (OTHER CHANGES)

ENDOCRINE (TUMORS)

TUMORIGENIC (CARCINOGENIC BY RTECS CRITERIA)

TUMORIGENIC (NEOPLASTIC BY RTECS CRITERIA)

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ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

### Additive 1 (Proprietary)

Oral Rat: 22600 UL/KG  
LD50: Skin Rabbit 3970 UL/KG

#### IRRITATION DATA

Skin Rabbit: 500 mg  
Remarks: Open irritation test

Eyes Rabbit: 100 mg  
Remarks: Mild irritation effect

### C: Component Analysis - LD50/LC50

#### 2-Heptanone (110-43-0)

##### Test & Species

Oral LD50 Rat  
Oral LD50 Mouse  
Dermal LD50 Rabbit

##### Data

1670 mg/kg  
730 mg/kg  
12600 µL/kg

#### Decahydronaphthalene (91-17-8)

##### Test & Species

Inhalation LC50 Rat  
Oral LD50 Rat  
Dermal LD50 Rabbit

##### Data

710 ppm/4H  
4170 mg/kg  
5900 µL/kg

### Additive 1 (Proprietary)

##### Test & Species

Oral LD50 Rat  
Dermal LD50 Rabbit

##### Data

22600 µL/kg  
3970 µL/kg

### Additive 2 (Proprietary)

##### Test & Species

Oral LD50 Rat  
Dermal LD50 Rabbit

##### Data

>5 g/kg  
>2 g/kg

### Additive 3 (Proprietary)

##### Test & Species

Oral LD50 Mouse

##### Data

5 g/kg

### 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

No information available for the product.

## \*\*\* Section 12 - Ecological Information \*\*\*

### Ecotoxicity

#### A: General Product Information

No ecotoxicity testing has been conducted on this product.



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### B: Component Analysis

#### 2-Heptanone (110-43-0)

Ecotoxicity: Fish: Fathead Minnow: LC50 = 131.0 mg/L; 96 Hr.; Flow-through Bioassay

Environmental: If released to soil, calculated soil adsorption coefficients ranging from 44-285 indicate that 2-heptanone may display moderate to high mobility and it has the potential to leach into groundwater. Heptanone has the potential to biodegrade in soil. If released to water, 2-heptanone is expected to rapidly volatilize to the atmosphere. The half-life for volatilization from a model river 1 m deep, flowing at 1 m/sec with a wind speed of 3 m/sec is 8.4hr.

Physical: If released to the atmosphere, 2-heptanone is expected to undergo a gas-phase reaction with photochemically produced hydroxyl radicals; the estimated half-life for this process is 1.9days.

Other: 2-Heptanone had a theoretical biological oxygen demand (BOD) of 1.4%, 2.4% and 4.8% after 6, 12 and 24 hr, respectively, when incubated with a activated sludge seed at an initial concentration of 500 ppm. 2-Heptanone underwent a 5 day theoretical BOD of 44%. In a screening study using a sewage seed, 2-heptanone had a 10 day BOD of 0.50 g/g.

### C: Component Analysis - Ecotoxicity - Aquatic Toxicity

#### 2-Heptanone (110-43-0)

##### Test & Species

96 Hr LC50 fathead minnow

##### Data

131.0 mg/L

##### Conditions

flow-through

### Environmental Fate

No ecological testing has been conducted on this product.

## \*\*\* 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:** Flammable liquids, n.o.s. (Contains: 2-Heptanone, Decahydronaphthalene)

**UN/NA #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:

**Proper Shipper Name:** n-Amyl methyl ketone, Mixture

**UN#:** 1110

**Class:** 3

**Packing Group:** III

**Additional Shipping Information:** Flash point 41°C

### TDG Information

**Shipping Name:** Flammable liquid, n.o.s. (Contains: 2-Heptanone, Decahydronaphthalene)

**UN/NA #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

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**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:

Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping Information: Flash point 41°C

### ICAO Information

**Shipping Name:** Flammable liquid, n.o.s. (Contains: 2-Heptanone , Decahydronaphthalene )

**UN #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:

Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping Information: Flash point 41°C

### IATA Information

**Shipping Name:** Flammable liquid, n.o.s. (Contains: 2-Heptanone , Decahydronaphthalene )

**UN #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:

Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping Information: Flash point 41°C

### ADR Information

**Shipping Name:** Flammable liquid, n.o.s. (Contains: 2-Heptanone , Decahydronaphthalene )

**UN #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:

Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping Information: Flash point 41°C

### RID Information

**Shipping Name:** Flammable liquid, n.o.s. (Contains: 2-Heptanone , Decahydronaphthalene )

**UN #:** UN1993 **Hazard Class:** 3 **Packing Group:** III

**Additional Info.:** The following classification should be used when Decahydronaphthalene is omitted from the product:



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Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping Information: Flash point 41°C

### IMDG Information

Shipping Name: Flammable liquid, n.o.s. (Contains: 2-Heptanone, Decahydronaphthalene)

UN #: UN1993 Hazard Class: 3 Packing Group: III

Additional Info.: The following classification should be used when Decahydronaphthalene is omitted from the product.

Proper Shipper Name: n-Amyl methyl ketone, Mixture

UN#: 1110

Class: 3

Packing Group: III

Additional Shipping information: Flash point 41°C

## \*\*\* Section 15 - Regulatory Information \*\*\*

### Additional Regulatory Information

#### A: General Product Information

THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE. It is not known to be on the TSCA, DSL/NDL, or METI Inventories and cannot be distributed by itself or as part of another product in commerce. 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

Component	CAS #	TSCA	Canada	EU	METI
2-Heptanone	110-43-0	Yes	DSL	EINECS	Yes
Decahydronaphthalene	91-17-8	Yes	DSL	EINECS	Yes
Cyclic olefin polymer	Not Available	No	No	No	No
Additive 1	Proprietary	Yes	DSL	EINECS	Yes
Additive 2	Proprietary	Yes	NDL	ELINCS	No
Additive 3	Proprietary	Yes	DSL	EINECS	Yes

#### C: Japan List of Designated Chemical Substances

None of the components in this product are listed on the Japanese List of Hazardous Substances.

### US Federal Regulations

#### A: General Product Information

No additional information available.

#### B: U.S. EPA TSCA 12(b) Export Notification

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

#### C: Component Analysis

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (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.

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### B: Component Analysis - State

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

Component	CAS	CA	MA	MN	NJ	PA	RI
2-Heptanone	110-43-0	Yes	Yes	Yes	Yes	Yes	Yes
Decahydronaphthalene	91-17-8	No	Yes	No	Yes	Yes	No
Additive 3	Proprietary	Yes	Yes	Yes	Yes	Yes	Yes

### Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
2-Heptanone	110-43-0	1 % (English Item 1015, French Item 1114); 1 % (English Item 1016, French Item 1115, listed as Methyl n-amyl ketone)

## \*\*\* Section 16 - Other Information \*\*\*

### 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

Group1: Carcinogenic to humans

Group2A: Probably carcinogenic to humans

Group2B: Possibly carcinogenic to humans

Group3: Unclassifiable as a carcinogen to humans

JSOH: Japan Society for Occupational Health

LVE: Low Volume Exemption

METI: Ministry of Environment, Trade, and Industry

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



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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

End of Sheet AVA2585P