

1. PRODUCT & COMPANY IDENTIFICATION

| | | |
|-----|------------------------------|---|
| 1.1 | Product Name: | PAUL MITCHELL® 5 VOL. CREAM DEVELOPER 1.5% |
| 1.2 | Chemical Name: | NA |
| 1.3 | Synonyms: | JPMS® 5 Vol. Cream Developer 1.5% |
| 1.4 | Trade Names: | John Paul Mitchell Systems® 5 Vol. Cream Developer 1.5% |
| 1.5 | Product Uses & Restrictions: | Professional Use Only |
| 1.6 | Distributor's Name: | TU-K Industries, Inc. |
| 1.7 | Distributor's Address: | 5702 Firestone Place, South Gate, CA 90280 |
| 1.8 | Emergency Phone: | CHEMTEL: +1 (800) 255-3924 / +01-813-248-0585 |
| 1.9 | Business Phone / Fax: | +1 (562) 927-3365 / +1 (562) 928-8154 |

2. HAZARDS IDENTIFICATION

| | | |
|-----|------------------------|---|
| 2.1 | Hazard Identification: | Prepared in accordance with UN Globally Harmonized standards. Intended to comply with OSHA 29 CFR 1910.1200, Canadian WHMIS and Australian Work Health and Safety standards. This product is classified as a hazardous substance BUT NOT as dangerous goods according to the classification criteria of WHSR and ADG Code (Australia). WARNING! CAUSES SERIOUS EYE IRRITATION. Classification: Eye Irrit. 2A |
| 2.2 | Label Elements: | Hazard Statements (H): H319 – Causes serious eye irritation. Precautionary Statements (P): P264 – Wash thoroughly after handling. P280 – Wear protective gloves and eye/face protection. P305+P351+P338 – IF IN EYES: Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 – If skin irritation occurs: Get medical advice/attention. P337+P313 – If eye irritation persists: Get medical advice/attention. P405 – Store locked up. P501 – Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDF).  |
| 2.3 | Other Warnings: | KEEP OUT OF REACH OF CHILDREN. NOTICE: This product is designed and intended for use by a licensed cosmetologist/professional hairdresser only, and carries no warranty, expressed or implied, if used by others. CAN CAUSE AN ALLERGIC REACTION. Preliminary patch testing is recommended. Tattoos, including black and temporary henna, may increase the risk of allergy, if a severe allergic reaction should occur, immediately seek medical attention. This product must not be used for dyeing the eyelashes or eyebrows; to do so may cause blindness. |

3. COMPOSITION & INGREDIENT INFORMATION

| CHEMICAL NAME(S) | CAS No. | RTECS No. | EINECS No. | % | EXPOSURE LIMITS IN AIR (mg/m ³) | | | | | | | | | OTHER |
|---------------------------|----------------------------------|-----------|------------|--------|---|------|--------|---------|---------|-------|------|------|--|-------|
| | | | | | ACGIH | | NOHSC | | | OSHA | | | | |
| | | | | | ppm | | ppm | | | ppm | | | | |
| | | | | | TLV | STEL | ES-TWA | ES-STEL | ES-PEAK | PEL | STEL | IDLH | | |
| AQUA (WATER/EAU) | 7732-18-5 | ZC0110000 | 231-791-2 | 60-100 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| HYDROGEN PEROXIDE | 7722-84-1 Eye Irrit. 2; H319 | MX0900000 | 231-765-0 | 1-5 | (1.4) | NA | (1.4) | NF | NF | (1.4) | NA | 75 | | |
| DECYL OLEATE | 3687-46-5 | NA | 222-981-6 | 1-5 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| CETYL ALCOHOL | 36653-82-4 | MM0225000 | 253-149-0 | 1-5 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| PROPRIETARY BLEND | NA | NA | NA | 1-5 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| TETRASODIUM PYROPHOSPHATE | 7722-88-5 Eye Irrit. 2; H319 | UX7350000 | 231-767-1 | < 1.0 | 5 | NA | 5 | NF | NF | 5 | NA | NA | | |
| PHOSPHORIC ACID | 7664-38-2 Skin Corr. 1B; H314 | TB6300000 | 231-633-2 | < 1.0 | (1) | (3) | NF | NF | NF | NA | NA | 1000 | | |

4. FIRST AID MEASURES

| | | | | | | | | | | | | | | | | | |
|-----------------------------|--|---|---------------|--|----------|---------------------|--|----------|-------------------------|--|----------|-----------------------------|--|----------|-------------|-------------|--|
| 4.1 | First Aid: | <p>Ingestion: If ingested, DO NOT INDUCE VOMITING. Seek immediate medical attention. Contact the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p>Eyes: If product gets in the eyes, remove contact lenses (if used), flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If irritation persists, seek medical attention.</p> <p>Skin: Discontinue use of the product and wash with soap and water. If discomfort persists, seek medical attention.</p> <p>Inhalation: Remove victim to fresh air at once. If not breathing, give artificial respiration and contact a physician or local emergency services immediately.</p> | | | | | | | | | | | | | | | |
| 4.2 | Effects of Exposure: | <p>Ingestion: If product is swallowed, may cause nausea, vomiting and/or diarrhea.</p> <p>Eyes: Moderately irritating to the eyes - may cause redness, itching, irritation and watering.</p> <p>Skin: May be irritating to skin. This product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.</p> <p>Inhalation: None expected.</p> | | | | | | | | | | | | | | | |
| 4.3 | Symptoms of Overexposure: | Overexposure in eyes may cause severe damage, redness, itching and watering. Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals. | | | | | | | | | | | | | | | |
| 4.4 | Acute Health Effects: | Moderate irritation to eyes and skin near affected areas. | | | | | | | | | | | | | | | |
| 4.5 | Chronic Health Effects: | No harmful or chronic health effects are expected to occur from a single accidental ingestion. | | | | | | | | | | | | | | | |
| 4.6 | Target Organs: | Eyes, Skin, Respiratory System | | | | | | | | | | | | | | | |
| 4.7 | Medical Conditions Aggravated by Exposure: | Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system). | | | | | | | | | | | | | | | |
| | | <table border="1"> <tr> <td colspan="2">HEALTH</td> <td>1</td> </tr> <tr> <td colspan="2">FLAMMABILITY</td> <td>0</td> </tr> <tr> <td colspan="2">PHYSICAL HAZARDS</td> <td>1</td> </tr> <tr> <td colspan="2">PROTECTIVE EQUIPMENT</td> <td>B</td> </tr> <tr> <td>EYES</td> <td>SKIN</td> <td></td> </tr> </table> | HEALTH | | 1 | FLAMMABILITY | | 0 | PHYSICAL HAZARDS | | 1 | PROTECTIVE EQUIPMENT | | B | EYES | SKIN | |
| HEALTH | | 1 | | | | | | | | | | | | | | | |
| FLAMMABILITY | | 0 | | | | | | | | | | | | | | | |
| PHYSICAL HAZARDS | | 1 | | | | | | | | | | | | | | | |
| PROTECTIVE EQUIPMENT | | B | | | | | | | | | | | | | | | |
| EYES | SKIN | | | | | | | | | | | | | | | | |

5. FIREFIGHTING MEASURES

| | | | |
|-----|---------------------------|--|---|
| 5.1 | Fire & Explosion Hazards: | This product is not flammable. However, if involved in a fire, this product may decompose at high temperatures to form toxic gases (e.g., CO, CO ₂ , NO _x). |  |
| 5.2 | Extinguishing Methods: | Water Spray, Foam, CO ₂ , Dry Chemical, Halon (if permitted) | |
| 5.3 | Firefighting Procedures: | As in any fire, wear MSHA/NIOSH approved self-contained breathing apparatus (pressure-demand) and full protective gear. Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personnel. Fight fire upwind. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. | |

6. ACCIDENTAL RELEASE MEASURES

| | | |
|-----|---------|---|
| 6.1 | Spills: | <p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment (PPE). Keep incompatible materials (e.g., organics: oil, paper towels, clothing) away from spill.</p> <p>For small spills (e.g., < 1 gallon (3.8 L)) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows). Remove spilled material with absorbent material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.</p> <p>For large spills (e.g., ≥ 1 gallon (3.8 L)) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows). Remove spilled material with absorbent material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.:</p> |
|-----|---------|---|

7. HANDLING & STORAGE INFORMATION

| | | |
|-----|---------------------------|--|
| 7.1 | Work & Hygiene Practices: | Do not eat, drink, or smoke while handling this product. Wash thoroughly after handling. Wash residues with soap and warm water. |
| 7.2 | Storage & Handling: | Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans). Keep away from excessive heat and open flames. Avoid temperatures above 120 °F. Keep away from incompatible substances. Protect containers from physical damage. Do not store any tint, lightener lotion or bleach powder after it has been mixed with developer, the container may rupture. Never return unused material to the original container. Empty containers should be rinsed with water before discarding. Reseal container tightly to keep out moisture and other contaminants. |
| 7.3 | Special Precautions: | Spilled material may present a fire and slipping hazard if left unattended. Clean all spills promptly. |

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

| 8.1 | Exposure Limits: ppm (mg/m ³) | CHEMICAL NAME(S) | ACGIH | | NOHSC | | | OSHA | | | OTHER |
|-----|--|---|-------|------|--------|---------|---------|-------|------|------|-------|
| | | | TLV | STEL | ES-TWA | ES-STEL | ES-PEAK | PEL | STEL | IDLH | |
| | | HYDROGEN PEROXIDE | (1.4) | NA | (1.4) | NF | NF | (1.4) | NA | 75 | |
| | | TETRASODIUM PYROPHOSPHATE | 5 | NA | 5 | NF | NF | 5 | NA | NA | |
| | | PHOSPHORIC ACID | (1) | (3) | NF | NF | NF | NA | NA | 1000 | |
| 8.2 | Ventilation & Engineering Controls: | When working with large quantities of product, provide adequate ventilation (e.g., local exhaust ventilation, fans). Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes. | | | | | | | | | |
| 8.3 | Respiratory Protection: | No special respiratory protection is required under typical circumstances of use or handling. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR §1910.134, applicable U.S. state regulations, or the appropriate standards of Canada, its provinces, E.C. member states, or Australia. | | | | | | | | | |
| 8.4 | Eye Protection: | AVOID EYE CONTACT. Wear protective eyewear (e.g., safety glasses with side-shield) at all times when handling large quantities (e.g., ≥ 1 gallon (3.8 L)) of this product. Always use protective eyewear when cleaning spills or leaks. Contact lenses pose a special hazard as soft lenses may absorb and concentrate irritants. | | | | | | | | | |
| 8.5 | Hand Protection: | AVOID SKIN CONTACT. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. During use of this product, wear latex or rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR §1910.138, the appropriate standards of Canada, of the E.C. member states. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. | | | | | | | | | |
| 8.6 | Body Protection: | Apron recommended when handling large quantities (e.g., ≥ 1 gallon). Eye wash stations and deluge showers should be available. | | | | | | | | | |



9. PHYSICAL & CHEMICAL PROPERTIES

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|------|--------------------------------------|----------------------------------|
| 9.1 | Appearance: | White cream, free flowing lotion |
| 9.2 | Odor: | Characteristic |
| 9.3 | Odor Threshold: | NA |
| 9.4 | pH: | 3.5-4.5 |
| 9.5 | Melting Point/Freezing Point: | NA |
| 9.6 | Initial Boiling Point/Boiling Range: | NA |
| 9.7 | Flashpoint: | NA |
| 9.8 | Upper/Lower Flammability Limits: | NA |
| 9.9 | Vapor Pressure: | NA |
| 9.10 | Vapor Density: | NA |
| 9.11 | Relative Density: | 0.992-0.998 gm/ml |
| 9.12 | Solubility: | Partial to complete |
| 9.13 | Partition Coefficient (log Pow): | NA |
| 9.14 | Autoignition Temperature: | NA |
| 9.15 | Decomposition Temperature: | NA |
| 9.16 | Viscosity: | 3,300-4,400 cPs |
| 9.17 | Other Information: | NA |

10. STABILITY & REACTIVITY

| | | |
|------|-----------------------------------|---|
| 10.1 | Stability: | This product is stable. |
| 10.2 | Hazardous Decomposition Products: | Oxide of carbon (CO, CO ₂), nitrogen (NO _x), and sulfur (SO ₂). Oxygen |
| 10.3 | Hazardous Polymerization: | Will not occur. |
| 10.4 | Conditions to Avoid: | Open flames, sparks and high heat, direct sunlight. |
| 10.5 | Incompatible Substances: | Store away from flammable liquids, flammable solids, aerosols and other incompatible materials (e.g., reducing materials, combustible materials, metal contamination like iron, copper their alloys). Avoid contamination. Do not store any tint, lightener I |

11. TOXICOLOGICAL INFORMATION

| | | | | |
|------|------------------------------|---|-----------------|----------------|
| 11.1 | Routes of Entry: | Inhalation: YES | Absorption: YES | Ingestion: YES |
| 11.2 | Toxicity Data: | This product has NOT been tested on animals to obtain toxicology data. Toxicology data, found in scientific literature, is available for some of the components, but is not presented in this document. | | |
| 11.3 | Acute Toxicity: | See Section 4.4 | | |
| 11.4 | Chronic Toxicity: | See Section 4.5 | | |
| 11.5 | Suspected Carcinogen: | <u>Hydrogen Peroxide</u> : ACGIH A3 (confirmed animal carcinogen with unknown relevance to humans). Not Listed: NTP, IARC, CA and OSHA. | | |
| 11.6 | Reproductive Toxicity: | This product is not reported to cause reproductive effects in humans. | | |
| | Mutagenicity: | This product is not reported to produce mutagenic effects in humans. | | |
| | Embryotoxicity: | This product is not reported to produce embryotoxic effects in humans. | | |
| | Teratogenicity: | This product is not reported to cause teratogenic effects in humans. | | |
| | Reproductive Toxicity: | This product is not reported to cause reproductive effects in humans. | | |
| 11.7 | Irritancy of Product: | See Section 4.3 | | |
| 11.8 | Biological Exposure Indices: | NE | | |
| 11.9 | Physician Recommendations: | Treat symptomatically. | | |

12. ECOLOGICAL INFORMATION

| | | |
|------|------------------------------|---|
| 12.1 | Environmental Stability: | There is no specific data available for this product. |
| 12.2 | Effects on Plants & Animals: | There is no specific data available for this product. |
| 12.3 | Effects on Aquatic Life: | The product itself has not been tested as a whole. There are no specific data available for this product. |

13. DISPOSAL CONSIDERATIONS

| | | |
|------|-------------------------|---|
| 13.1 | Waste Disposal: | Dispose of in accordance with federal, state and local regulations. |
| 13.2 | Special Considerations: | NA |

14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

| | | |
|------|----------------|---------------|
| 14.1 | 49 CFR (GND): | NOT REGULATED |
| 14.2 | IATA (AIR): | NOT REGULATED |
| 14.3 | IMDG (OCN): | NOT REGULATED |
| 14.4 | TDGR (CANADA): | NOT REGULATED |
| 14.5 | ADR/RID (EU): | NOT REGULATED |
| 14.6 | SCT (MEXICO): | NOT REGULATED |
| 14.7 | ADGR (AUS): | NOT REGULATED |

15. REGULATORY INFORMATION

| | | |
|------|-----------------------------------|---|
| 15.1 | SARA Reporting Requirements: | This product contains <u>Phosphoric Acid</u> , a substance subject to SARA Title III, section 313 reporting requirements. |
| 15.2 | SARA Threshold Planning Quantity: | There are no specific Threshold Planning Quantities for the components of this product. |
| 15.3 | TSCA Inventory Status: | The components of this product are listed on the TSCA Inventory. |
| 15.4 | CERCLA Reportable Quantity (RQ): | <u>Hydrogen Peroxide</u> : 454 kg (1000 lbs); <u>Phosphoric Acid</u> : 2270 kg (5000 lbs) |
| 15.5 | Other Federal Requirements: | This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR Subchapter G, (Cosmetics). |
| 15.6 | Other Canadian Regulations: | This product has been classified according to the hazard criteria of the CPR and the SDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. WHMIS class C (Oxidizing)  |
| 15.7 | State Regulatory Information: | <u>Hydrogen Peroxide</u> can be found on the following state right to know lists: CA, FL, MA, MN, NJ, PA. <u>Phosphoric Acid</u> can be found on the following state right to know lists: CA, MA, MN, NJ, PA. No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI). |
| 15.8 | Other Requirements: | This product is found on the following inventory lists: Australia - AICS, China - IECSC, Europe - ELINCS/EINEC, Japan - ENCS; Korea - KECl; New Zealand - NZIoC; {Philippines - PICCS; USA - TSCA |

16. OTHER INFORMATION

| | | | |
|------|----------------------|---|--|
| 16.1 | Other Information: | <p>WARNING! CAUSES MILD SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION.</p> <p>Wash thoroughly after handling. Wear protective gloves and eye/face protection. IF IN EYES: Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Store locked up. Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDF).</p> <p>KEEP OUT OF REACH OF CHILDREN.</p> <p>NOTICE: This product is designed and intended for use by a licensed cosmetologist/professional hairdresser only, and carries no warranty, expressed or implied, if used by others. CAN CAUSE AN ALLERGIC REACTION Preliminary patch testing is recommended. Tattoos, including black and temporary henna, may increase the risk of allergy, if a severe allergic reaction should occur, immediately seek medical attention. This product must not be used for dyeing the eyelashes or eyebrows; to do so may cause blindness.</p> | |
| 16.2 | Terms & Definitions: | See last page of this Safety Data Sheet. | |
| 16.3 | Disclaimer: | This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & TU-K Industries, Inc.'s (2K Industries) knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition. | |
| 16.4 | Prepared for: | <p>TU-K Industries, Inc. (2K) 5702 Firestone Place South Gate, CA 90280 USA Tel: +1 (562) 927-3365 Fax: +1 (562) 928-8154 http://www.2kindustries.com</p> |  |
| 16.5 | Prepared by: | <p>ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com</p> |  |

DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

| | |
|-------------------|--|
| CAS No. | Chemical Abstract Service Number |
| RTECS No. | Registry of Toxic Effects of Chemical Substances Number |
| EINECS No. | European Inventory of Existing Commercial Chemical Substances Number |

EXPOSURE LIMITS IN AIR:

| | |
|--------------|--|
| ACGIH | American Conference on Governmental Industrial Hygienists |
| IDLH | Immediately Dangerous to Life and Health |
| NOHSC | National Occupational Health and Safety Commission (Australia) |
| OSHA | U.S. Occupational Safety and Health Administration |
| PEL | Permissible Exposure Limit |
| STEL | Short Term Exposure Limit |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

FIRST AID MEASURES:

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|------------|--|
| CPR | Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body. |
|------------|--|

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

| | |
|---|-----------------|
| 0 | Minimal Hazard |
| 1 | Slight Hazard |
| 2 | Moderate Hazard |
| 3 | Severe Hazard |
| 4 | Extreme Hazard |

| |
|----------------------------|
| HEALTH |
| FLAMMABILITY |
| PHYSICAL HAZARDS |
| PERSONAL PROTECTION |

PERSONAL PROTECTION RATINGS:

| | |
|----------|--|
| A | |
| B | |
| C | |
| D | |
| E | |
| F | |

| | |
|----------|--|
| G | |
| H | |
| I | |
| J | |
| K | |
| X | Consult your supervisor or SOPs for special handling directions. |

| | | | |
|----------------------|-----------------------------------|----------------------------------|---------------------------|
| | | | |
| Safety Glasses | Splash Goggles | Face Shield & Protective Eyewear | Gloves |
| | | | |
| Boots | Protective Apron | Protective Clothing & Full Suit | Dust Respirator |
| | | | |
| Full Face Respirator | Dust & Vapor Half-Mask Respirator | Full Face Respirator | Airline Hood/Mask or SCBA |

OTHER STANDARD ABBREVIATIONS:

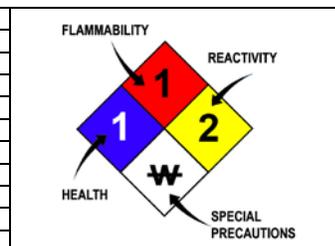
| | |
|----------------|--|
| Carc | Carcinogenic |
| Irrit | Irritant |
| NA | Not Available |
| NR | No Results |
| ND | Not Determined |
| NE | Not Established |
| NF | Not Found |
| SCBA | Self-Contained Breathing Apparatus |
| Sens | Sensitization |
| STOT RE | Specific Target Organ Toxicity – Repeat Exposure |
| STOT SE | Specific Target Organ Toxicity – Single Exposure |

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

| FLAMMABILITY LIMITS IN AIR: | |
|---------------------------------|---|
| Autoignition Temperature | Minimum temperature required to initiate combustion in air with no other source of ignition |
| LEL | Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source |
| UEL | Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source |

HAZARD RATINGS:

| | |
|----------------|-----------------|
| 0 | Minimal Hazard |
| 1 | Slight Hazard |
| 2 | Moderate Hazard |
| 3 | Severe Hazard |
| 4 | Extreme Hazard |
| ACD | Acidic |
| ALK | Alkaline |
| COR | Corrosive |
| W | Use No Water |
| OX | Oxidizer |
| TREFOIL | Radioactive |



TOXICOLOGICAL INFORMATION:

| | |
|---|---|
| LD₅₀ | Lethal Dose (solids & liquids) which kills 50% of the exposed animals |
| LC₅₀ | Lethal concentration (gases) which kills 50% of the exposed animal |
| ppm | Concentration expressed in parts of material per million parts |
| TD₀₁ | Lowest dose to cause a symptom |
| TCLo | Lowest concentration to cause a symptom |
| TD₀₁, LD₀₁, & LD₀₂ or TC, TC₀₁, LC₀₁, & LC₀₂ | Lowest dose (or concentration) to cause lethal or toxic effects |
| IARC | International Agency for Research on Cancer |
| NTP | National Toxicology Program |
| RTECS | Registry of Toxic Effects of Chemical Substances |
| BCF | Bioconcentration Factor |
| TL_m | Median threshold limit |
| log K_{ow} or log K_{oc} | Coefficient of Oil/Water Distribution |

REGULATORY INFORMATION:

| | |
|--------------|--|
| WHMIS | Canadian Workplace Hazardous Material Information System |
| DOT | U.S. Department of Transportation |
| TC | Transport Canada |
| EPA | U.S. Environmental Protection Agency |
| DSL | Canadian Domestic Substance List |
| NDSL | Canadian Non-Domestic Substance List |
| PSL | Canadian Priority Substances List |
| TSCA | U.S. Toxic Substance Control Act |
| EU | European Union (European Union Directive 67/548/EEC) |
| WGK | Wassergefährdungsklassen (German Water Hazard Class) |

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

| | | | | | | | |
|------------|-----------|-----------|----------|------------|------------|-----------|----------|
| | | | | | | | |
| Class A | Class B | Class C | Class D1 | Class D2 | Class D3 | Class E | Class F |
| Compressed | Flammable | Oxidizing | Toxic | Irritation | Infectious | Corrosive | Reactive |

CLP/GHS (1272/2008/EC) PICTOGRAMS:

| | | | | | | | | |
|-----------|-----------|----------|-------------|-----------|-------|--------------------|---------------|-------------|
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| GHS01 | GHS02 | GHS03 | GHS04 | GHS05 | GHS06 | GHS07 | GHS08 | GHS09 |
| Explosive | Flammable | Oxidizer | Pressurized | Corrosive | Toxic | Harmful Irritating | Health Hazard | Environment |