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|---|--|---|--|--|--|--|--|--|--|-------------------|--|------------------------------|--|
| PAUL MITCHELL | | <h1 style="margin: 0;">SAFETY DATA SHEET</h1> | | | | | | | | | | Page 1 of 6 2K-004 | |
| Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards | | | | | | | | | | SDS Revision: 1.6 | | SDS Revision Date: 1/1/2018 | |

| 1. PRODUCT & COMPANY IDENTIFICATION | | | | | | | | | | | | | |
|-------------------------------------|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|
| 1.1 | Product Name: | JOHN PAUL MITCHELL SYSTEMS 20 VOL. CLEAR DEVELOPER 6 % | | | | | | | | | | | |
| 1.2 | Chemical Name: | NA | | | | | | | | | | | |
| 1.3 | Synonyms: | JPMS 20 Vol. Clear Developer 6% | | | | | | | | | | | |
| 1.4 | Trade Names: | John Paul Mitchell Systems 20 Vol. Clear Developer 6% | | | | | | | | | | | |
| 1.5 | Product Uses & Restrictions: | Professional or Cosmetic 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: | <p>This product is classified as a HAZARDOUS SUBSTANCE but NOT as DANGEROUS GOODS according to the classification criteria of NOHSC: 1088 (2004) and ADG Code (Australia).</p> <p>WARNING! HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION.</p> <p><u>Classification:</u> Eye Irrit. 2; Acute Oral 4</p> <p><u>Hazard Statements (H):</u> H302 – Harmful if swallowed. H319 – Causes serious eye irritation.</p> <p><u>Precautionary Statements (P):</u> 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. 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).</p> | | | | | | | | | |  | |

| 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 | MX0900000 | 231-765-0 | 5.5-6.5 | (1.4) | NA | (1.4) | NF | NF | (1.4) | NA | 75 | | |
| | Acute Oral 4; Eye Irrit. 2; H319 | | | | | | | | | | | | | |
| POLYSORBATE 80 | 9005-65-6 | NA | 500-019-9 | < 1.0 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| POLYSORBATE 20 | 9005-64-5 | NA | NA | < 1.0 | NA | NA | NF | NF | NF | NA | NA | NA | | |
| ISOPROPYL C12-15-PARETH-9 CARBOXYLATE | NA | NA | NA | < 1.0 | NA | NA | NF | NF | NF | NA | NA | NA | | |

| 4. FIRST AID MEASURES | |
|-----------------------|---|
| 4.1 | <p>First Aid:</p> <p><u>Ingestion:</u> If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give water or milk to an unconscious person. Contact the nearest Poison Control Center or local emergency number. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed.</p> <p><u>Eyes:</u> Splashes are not likely; however, if product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. Seek immediate medical attention.</p> <p><u>Skin:</u> If irritation occurs and product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with soap and water. If irritation, redness or swelling persists, contact a physician immediately.</p> <p><u>Inhalation:</u> Remove victim to fresh air at once.</p> |
| 4.2 | <p>Effects of Exposure:</p> <p><u>Ingestion:</u> If product is swallowed, may cause nausea, vomiting and/or diarrhea.</p> <p><u>Eyes:</u> Moderately irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><u>Skin:</u> May be irritating to skin. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.</p> <p><u>Inhalation:</u> None expected.</p> |
| 4.3 | <p>Symptoms of Overexposure:</p> <p>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.</p> |
| 4.4 | <p>Acute Health Effects:</p> <p>Severe irritation to eyes. Symptoms of overexposure may include redness, itching, stinging, irritation and watering. Moderate irritation to skin near affected areas.</p> |



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|---|--|--|------|--------|---------|-------------------|-------|--|------|---|--|---|--------------|--|---|------------------|--|---|----------------------|--|---|------|------|--|
| PAUL MITCHELL | | SAFETY DATA SHEET | | | | | | Page 2 of 6 2K-004 | | | | | | | | | | | | | | | | |
| Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards | | | | | | SDS Revision: 1.6 | | SDS Revision Date: 1/1/2018 | | | | | | | | | | | | | | | | |
| 4. FIRST AID MEASURES – cont'd | | | | | | | | | | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | | | | | | | | |
| 5.2 | Extinguishing Methods: | CO ₂ , Halon (if permitted), Dry Chemical, Foam, as authorized. | | | | | | | | | | | | | | | | | | | | | | |
| 5.3 | Firefighting Procedures: | <p>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 personal. 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.</p> | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 such as oil) away from spill.</p> <p>For <u>small spills</u> (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.</p> <p>For <u>large spills</u> (e.g., ≥ 1 gallon (3.8 L)), deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g., sand or earth). Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for proper disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. 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. Avoid contact with flammable or combustible materials. Avoid contamination from any source, including metals, dust and organic materials. Keep bulk covered. Wash unintentional 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. | | | | | | | | | | | | | | | | | | | | | | |
| 7.3 | Special Precautions: | Spilled material may present a slipping hazard if left unattended. Clean all spills promptly. | | | | | | | | | | | | | | | | | | | | | | |
| 8. EXPOSURE CONTROLS & PERSONAL PROTECTION | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.1 | Exposure Limits: ppm (mg/m ³) | ACGIH | | NOHSC | | | OSHA | | | OTHER | | | | | | | | | | | | | | |
| | CHEMICAL NAME(S) | TLV | STEL | ES-TWA | ES-STEL | ES-PEAK | PEL | STEL | IDLH | | | | | | | | | | | | | | | |
| | HYDROGEN PEROXIDE | (1.4) | NA | (1.4) | NF | NF | (1.4) | NA | 75 | | | | | | | | | | | | | | | |
| 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, or applicable U.S. state regulations, or the appropriate standards of Canada, its provinces, E.C. member states, or Australia. | | | | | | | | | | | | | | | | | | | | | | |
| 8.4 | Eye Protection: | Wear protective eyewear (e.g., safety glasses with side-shield) at all times when handling this product. Always use protective eyewear when cleaning spills or leaks. Contact lenses pose a special hazard; soft lenses may absorb and concentrate irritants. | | | | | | | |  | | | | | | | | | | | | | | |
| 8.5 | Hand Protection: | AVOID SKIN CONTACT DUE TO SENSITIZING POTENTIAL. If anticipated that prolonged & repeated skin contact will occur 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. | | | | | | | |  | | | | | | | | | | | | | | |
| 8.6 | Body Protection: | AVOID SKIN CONTACT DUE TO SENSITIZING POTENTIAL. However, no special body protection is required under typical circumstances of use and handling. If necessary, refer to appropriate standards of Canada, the E.C. member states, or U.S. OSHA. | | | | | | | | | | | | | | | | | | | | | | |

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| PAUL MITCHELL | | SAFETY DATA SHEET | | Page 3 of 6 2K-004 | |
| Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards | | | SDS Revision: 1.6 | | SDS Revision Date: 1/1/2018 |
| 9. PHYSICAL & CHEMICAL PROPERTIES | | | | | |
| 9.1 | Appearance: | Colorless clear liquid | | | |
| 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: | 1.012-1.022 gm/ml | | | |
| 9.12 | Solubility: | Partial to complete | | | |
| 9.13 | Partition Coefficient (log P _{ow}): | NA | | | |
| 9.14 | Autoignition Temperature: | NA | | | |
| 9.15 | Decomposition Temperature: | NA | | | |
| 9.16 | Viscosity: | NA | | | |
| 9.17 | Other Information: | NA | | | |
| 10. STABILITY & REACTIVITY | | | | | |
| 10.1 | Stability: | This product is stable. | | | |
| 10.2 | Hazardous Decomposition Products: | Oxides of carbon (CO, CO ₂) and sulfur (SO ₂). Liberation of gas may result in dangerous pressure. | | | |
| 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 and their alloys). Avoid contamination. 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 original container. Avoid extreme heat and ignition sources. | | | |
| 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 toxicological data. There are toxicology data for the components of this product, which are found in the scientific literature. Data for some components are presented: <u>Hydrogen Peroxide</u> LD ₅₀ Oral Rat 1,518 mg/kg. | | | |
| 11.3 | Acute Toxicity: | See section 4.4 | | | |
| 11.4 | Chronic Toxicity: | See section 4.5 | | | |
| 11.5 | Suspected Carcinogen: | This product contains <u>Hydrogen peroxide</u> listed: ACGIH Group A3; IARC Group 3: Not classifiable as to its carcinogenicity to humans. | | | |
| 11.6 | Reproductive Toxicity: | This product is not reported to produce reproductive toxicity 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: | There is 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 | | | |

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| PAUL MITCHELL | | SAFETY DATA SHEET | | Page 4 of 6 2K-004 |
| Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards | | | SDS Revision: 1.6 | SDS Revision Date: 1/1/2018 |
| 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 (Canadian GND): | 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 does not contain any substances 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): | NA | | |
| 15.5 | Other Federal Requirements: | This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR subchapter G (Cosmetics). This material does not contain any hazardous air pollutants. None of the components in this product are listed as priority pollutants under the CWA. None of the components in this product are listed as toxic pollutants under the CWA. | | |
| 15.6 | Other Canadian Regulations: | This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDL. None of the components of this product are listed on the Priorities Substances List. WHMIS | |  |
| 15.7 | State Regulatory Information: | <u>Hydrogen Peroxide</u> is found on the following state criteria list: Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), Pennsylvania Right-to-Know List (PA) and Washington Permissible Exposures List (WA). 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: | The primary components of this product are listed in Annex I of EU Directive 67/548/EEC: <u>Hydrogen Peroxide</u> : Irritant (Xi); Harmful (Xn) <u>Risk Phrases</u> (R): 20/22-36 – Harmful by inhalation and if swallowed. Irritating to eyes. <u>Safety Phrases</u> (S): 2-3/7-20-26-36/37/39 - Keep away from children. Keep container tightly closed in a cool place. When using do not eat or drink. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. | |  |

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| | | SDS Revision Date: 1/1/2018 |

16. OTHER INFORMATION

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|------|----------------------|--|---|
| 16.1 | Other Information: | <p>WARNING! HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION. For external use only. Use only as directed. Discontinue use immediately if irritation develops. Keep away from children. Keep container tightly closed in a cool place. When using do not eat or drink. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. If case of accident or if you feel unwell seek medical advice immediately (show the label where possible). KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.</p> <p>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: | <p>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 & John Paul Mitchell Systems' (2K Industries), knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are 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.</p> | |
| 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> |  |

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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 |
|---------|----------------------------------|

EXPOSURE LIMITS IN AIR:

| | |
|-------|---|
| ACGIH | American Conference on Governmental Industrial Hygienists |
| C | Ceiling Limit |
| ES | Exposure Standard (Australia) |
| IDLH | Immediately Dangerous to Life and Health |
| 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:

| | |
|-----|--|
| 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. |
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HMIS-III 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 | | G | |
| B | | H | |
| C | | I | |
| D | | J | |
| E | | K | |
| F | | X | Consult your supervisor or SOPs for special handling directions. |

| | | | |
|----------------------|-----------------------------------|----------------------------------|---------------------------|
| Safety Glasses | Splash Goggles | Face Shield & Protective Eyewear | Gloves |
| Boots | Synthetic 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:

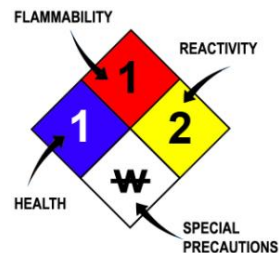
| | |
|-------|------------------------------------|
| ML | Maximum Limit |
| mg/m3 | milligrams per cubic meter |
| NA | Not Available |
| ND | Not Determined |
| NE | Not Established |
| NF | Not Found |
| NR | No Results |
| ppm | parts per million |
| SCBA | Self-Contained Breathing Apparatus |

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:

| | |
|--|---|
| LD ₅₀ | Lethal Dose (solids & liquids) which kills 50% of the exposed animals |
| LC ₅₀ | Lethal concentration (gases) which kills 50% of the exposed animal |
| ppm | Concentration expressed in parts of material per million parts |
| TD ₀₁ | Lowest dose to cause a symptom |
| TCLO | Lowest concentration to cause a symptom |
| TD ₀₁ , LD ₀₁ , & LD ₀₁ or TC, TC ₀₁ , LC ₀₁ , & LC ₀₁ | 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 |
| NOHSC | National Occupational Health and Safety Commission (Australia) |
| 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) |
| HMIS-III | National Paint & Coatings Association Hazardous Materials Identification System |

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 |

EC (67/548/EEC) INFORMATION:

| | | | | | | | |
|-----------|-----------|-----------|---------|-----------|-------|----------|---------|
| | | | | | | | |
| C | E | F | N | O | T | Xi | Xn |
| Corrosive | Explosive | Flammable | Harmful | Oxidizing | Toxic | Irritant | Harmful |

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

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