


## 1. PRODUCT & COMPANY IDENTIFICATION

|     |                        |   |
|-----|------------------------|---|
| 1.1 | Product Name:          | <b>RED LINE ANTIGEL</b>   |
| 1.2 | Chemical Name:         | 2-Ethylhexyl Nitrate Mixture  |
| 1.3 | Synonyms:              | NA  |
| 1.4 | Trade Names:           | Red Line Antigel  |
| 1.5 | Product Use:           | Fuel System Cleaner   |
| 1.6 | Distributor's Name:    | <b>Worldpac, Inc.</b>   |
| 1.7 | Distributor's Address: | 37137 Hickory Street, Newark, CA 94560 USA                              |
| 1.8 | Emergency Phone:       | <b>INFOTRAC: +1 (800) 535-5053 / +1 (352) 323-3500 (CONTRACT 84261)</b> |
| 1.9 | Business Phone / Fax:  | +1 (510) 608-5525 / +1 (510) 742-9262                                   |

## 2. HAZARDS IDENTIFICATION

|     |                           |   |   |
|-----|---------------------------|---|---|
| 2.1 | Hazard Identification:    | 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).<br><b>WARNING! HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION.</b><br><u>Hazard Statements (H):</u> H302 – Harmful if swallowed. H319 – May cause an allergic skin reaction.<br><u>Precautionary Statements (P):</u> P264 - Wash hands and exposed skin areas with soap and warm water thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear eye protection/face protection. P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330 – Rinse mouth. P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P337+P313 - If eye irritation persists get medical advice/attention. P501 - Dispose of contents/container to licensed treatment, storage and disposal facility (TSDF). |  |
| 2.2 | Effects of Exposure:      | <u>Eyes:</u> May cause irritation, redness and tearing. Vapors may be irritating to the eyes. Risk of conjunctivitis.<br><u>Skin:</u> May cause irritation, defatting, drying and cracking of skin. Prolonged and repeated contact may lead to dermatitis.<br><u>Ingestion:</u> May cause a burning sensation of the mouth and throat, abdominal pain, gastrointestinal irritation, nausea, vomiting and diarrhea. May also cause kidney damage, cardiac arrhythmia and Central Nervous System effects (see inhalation). Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Can be fatal if inhaled or ingested.<br><u>Inhalation:</u> Vapors may be irritating to nose, throat and respiratory tract. Excessive inhalation of vapors may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.  |   |
| 2.3 | Symptoms of Overexposure: | <u>Eyes:</u> Irritation, redness, swelling and tearing.<br><u>Skin:</u> Irritation, defatting, drying and cracking of skin.<br><u>Ingestion:</u> Burning sensation of the mouth and throat, abdominal pain, gastrointestinal irritation, nausea, vomiting and diarrhea.<br><u>Inhalation:</u> Irritation to nose, throat and respiratory tract, dizziness, coughing, wheezing, weakness, fatigue, nausea, headache and possible unconsciousness.  |   |
| 2.4 | Acute Health Effects:     | Moderate irritation to eyes. Moderate irritation to skin near affected areas. Vapors may be irritating to nose, throat and respiratory tract.   |   |
| 2.5 | Chronic Health Effects:   | Prolonged or repeated skin contact may lead to dermatitis. <u>Xylene</u> has been found to cause cardiac, liver, and kidney effects, anemia and eye damage in laboratory animals.   |   |
| 2.6 | Target Organs:            | Blood, Liver, Kidneys, Spleen, Central Nervous System (CNS)   |   |

## 3. COMPOSITION & INGREDIENT INFORMATION

| CHEMICAL NAME(S)     | CAS No.   | RTECS No. | EINECS No. | %     | EXPOSURE LIMITS IN AIR (mg/m <sup>3</sup> ) |      |        |         |         |      |      |      |             |  | OTHER |
|----------------------|---|-----------|------------|-------|---|------|--------|---------|---------|------|------|------|-------------|--|-------|
|                      |   |           |            |       | ACGIH                                       |      | NOHSC  |         |         | OSHA |      |      |             |  |       |
|                      |   |           |            |       | ppm   |      | ppm    |         |         | ppm  |      |      |             |  |       |
|                      |   |           |            |       | TLV   | STEL | ES-TWA | ES-STEL | ES-PEAK | PEL  | STEL | IDLH |             |  |       |
| 2-ETHYLHEXYL NITRATE | 27247-96-7  | QU7925000 | 248-363-6  | 0.1-1 | NA  | NA   | NF     | NF      | NF      | NA   | NA   | NA   | (1) MFR REC |  |       |
|                      | Acute Tox. 4; Aquatic Chronic 2; H302, H312, H332, H411 |           |            |       |   |      |        |         |         |      |      |      |             |  |       |
| 2-ETHYLHEXANOL       | 104-76-7  | MP0350000 | 203-234-3  |       | NA  | NA   | NF     | NF      | NF      | NA   | NA   | NA   |             |  |       |
|                      | Eye Irrit. 2; H319                                      |           |            |       |   |      |        |         |         |      |      |      |             |  |       |


NA = Not Available; ND = Not Determined; NE = Not Established; NF = Not Found; C = Ceiling Limit; See Section 16 for Additional Definitions of Terms Used

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2010 format.

## 4. FIRST AID MEASURES

|                             |  |   |               |          |                     |          |                         |          |                             |  |             |             |
|-----------------------------|--|---|---------------|----------|---------------------|----------|-------------------------|----------|-----------------------------|--|-------------|-------------|
| 4.1                         | First Aid:                                 | <p><b>Ingestion:</b> Do NOT induce vomiting. Contact Infotrac +1 (800) 535-5053 or the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p><b>Eyes:</b> If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If the eyes or face become swollen during or following use, consult a physician or emergency room immediately.</p> <p><b>Skin:</b> Remove contaminated clothing and wash affected areas with soap and water. If discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p><b>Inhalation:</b> Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial respiration. Seek immediate medical attention.</p> |               |          |                     |          |                         |          |                             |  |             |             |
| 4.2                         | Medical Conditions Aggravated by Exposure: | Persons with pre-existing skin disorders, chronic respiratory diseases, or impaired liver or kidney function should avoid exposure.   |               |          |                     |          |                         |          |                             |  |             |             |
|                             |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #0000FF; color: white;"><b>HEALTH</b></td> <td style="text-align: center;"><b>2</b></td> </tr> <tr> <td style="background-color: #FF0000; color: white;"><b>FLAMMABILITY</b></td> <td style="text-align: center;"><b>2</b></td> </tr> <tr> <td style="background-color: #FFA500;"><b>PHYSICAL HAZARDS</b></td> <td style="text-align: center;"><b>3</b></td> </tr> <tr> <td colspan="2"><b>PROTECTIVE EQUIPMENT</b></td> </tr> <tr> <td style="text-align: center;"><b>EYES</b></td> <td style="text-align: center;"><b>SKIN</b></td> </tr> </table>   | <b>HEALTH</b> | <b>2</b> | <b>FLAMMABILITY</b> | <b>2</b> | <b>PHYSICAL HAZARDS</b> | <b>3</b> | <b>PROTECTIVE EQUIPMENT</b> |  | <b>EYES</b> | <b>SKIN</b> |
| <b>HEALTH</b>               | <b>2</b>                                   |   |               |          |                     |          |                         |          |                             |  |             |             |
| <b>FLAMMABILITY</b>         | <b>2</b>                                   |   |               |          |                     |          |                         |          |                             |  |             |             |
| <b>PHYSICAL HAZARDS</b>     | <b>3</b>                                   |   |               |          |                     |          |                         |          |                             |  |             |             |
| <b>PROTECTIVE EQUIPMENT</b> |  |   |               |          |                     |          |                         |          |                             |  |             |             |
| <b>EYES</b>                 | <b>SKIN</b>                                |   |               |          |                     |          |                         |          |                             |  |             |             |

## 5. FIREFIGHTING MEASURES

|     |                           |   |  |
|-----|---------------------------|---|--|
| 5.1 | Fire & Explosion Hazards: | Wear suitable protective clothing and gloves. Wear eye/face protection. This material can burn but will not readily ignite. This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, heated vapor can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point. Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur and nitrogen. Also, depending upon the conditions of use, low concentrations of hydrogen sulfide can be released.   |  |
| 5.2 | Extinguishing Methods:    | Water, Foam, CO <sub>2</sub> , Dry Chemical, low velocity water fog, Halon (if permitted),  |  |
| 5.3 | Firefighting Procedures:  | As with any fire, firefighters should wear appropriate protective equipment including a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personal. Avoid spraying water directly into storage containers because of danger of boil-over. 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). Use safety glasses or safety goggles and face shield; use gloves and other protective clothing (e.g., apron, boots, etc.) to prevent skin contact.</p> <p><b>Small Spills:</b> Wear appropriate protective equipment including gloves and protective eyewear. Use a non-combustible, inert material such as vermiculite or sand to soak up the product and place into a container for later disposal.</p> <p><b>Large Spills:</b> Keep incompatible materials (e.g., oxidizers, strong acids, alkalis) away from spill. Stay upwind and away from spill or release. Isolate immediate hazard area and keep unauthorized personnel out of area. Stop spill or release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant. Recover as much free liquid as possible and collect in acid-resistant container. Use absorbent to pick up residue. Avoid discharging liquid directly into a sewer or surface waters.</p> |
|-----|---------|---|

## 7. HANDLING & STORAGE INFORMATION

|     |                           |  |
|-----|---------------------------|--|
| 7.1 | Work & Hygiene Practices: | Avoid breathing mists or spray. Avoid eye and skin contact. Wear protective equipment when handling product. Keep out of the reach of children. Do not eat, drink or smoke when handling this product. Wash thoroughly after handling. Do not expose to heat and flame. Use only in ventilated areas. Immediately clean-up and decontaminate any spills or residues. |
| 7.2 | Storage & Handling:       | Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans) away from heat and direct sunlight. Store in closed containers. Avoid temperatures above 40°C (120°F). Keep away from incompatible substances (see Section 10). Protect containers from physical damage.  |
| 7.3 | Special Precautions:      | Empty containers may retain hazardous product residues.  |

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

|     |                                     |   |   |
|-----|-------------------------------------|---|---|
| 8.1 | Ventilation & Engineering Controls: | Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the handling of this product. Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).  |   |
| 8.2 | Respiratory Protection:             | No special respiratory protection is required under typical circumstances of use or handling. In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member States, or Australia. |   |
| 8.3 | Eye Protection:                     | Avoid eye contact. Safety glasses with side shields must be used when handling or using this product. A protective face shield is also recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).  |  |
| 8.4 | Hand Protection:                    | Wear protective, chemical-resistant gloves (e.g., neoprene, nitrile, PVC) when using or handling this product. 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.  |  |
| 8.5 | Body Protection:                    | Not required under normal conditions of use. A chemical resistant apron and/or protective clothing are recommended when handling or using large quantities (e.g., > 5 gallons (18.9 L)) of this product. Protective working garments should meet EU Standard EN 344 or equivalent.  |   |

## 9. PHYSICAL & CHEMICAL PROPERTIES

|      |   |  |
|------|---|--|
| 9.1  | Appearance:                                   | Light brown liquid                       |
| 9.2  | Odor:   | Pungent odor                             |
| 9.3  | Odor Threshold:                               | NA                                       |
| 9.4  | pH:   | NA                                       |
| 9.5  | Melting Point/Freezing Point:                 | NA                                       |
| 9.6  | Initial Boiling Point/Boiling Range:          | NA                                       |
| 9.7  | Flashpoint:                                   | 82 °C (180 °F)                           |
| 9.8  | Upper/Lower Flammability Limits:              | NA                                       |
| 9.9  | Vapor Pressure:                               | NA                                       |
| 9.10 | Vapor Density:                                | NA                                       |
| 9.11 | Relative Density:                             | 0.90 g/cm <sup>3</sup> @ 15.6 °C (60 °F) |
| 9.12 | Solubility:                                   | Insoluble                                |
| 9.13 | Partition Coefficient (log P <sub>ow</sub> ): | NA                                       |
| 9.14 | Autoignition Temperature:                     | NA                                       |
| 9.15 | Decomposition Temperature:                    | NA                                       |
| 9.16 | Viscosity:                                    | Kinematic @ 40 °C (104 °F): 22 cSt       |
| 9.17 | Other Information:                            | Pour Point: -51 °C (-60 °F)              |

## 10. STABILITY & REACTIVITY

|      |                                   |  |
|------|-----------------------------------|--|
| 10.1 | Stability:                        | This product is stable under normal storage and use conditions.                                      |
| 10.2 | Hazardous Decomposition Products: | Oxides of carbon (CO, CO <sub>2</sub> ), sulfur (SO <sub>x</sub> ), and nitrogen (NO <sub>x</sub> ). |
| 10.3 | Hazardous Polymerization:         | Will not occur.  |
| 10.4 | Conditions to Avoid:              | Open flames, high heat and direct sunlight.  |
| 10.5 | Incompatible Substances:          | Strong oxidizing agents, acids or alkalis.   |

## 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. Toxicology data for some of the components in this mixture, found in scientific literature, are presented below:<br><u>2-Ethylhexanol</u> : LC <sub>50</sub> (inh, rat, 1h): 2.7 mg/L; LD <sub>50</sub> (oral, rat): > 2000 mg/kg |                 |                |
| 11.3 | Acute Toxicity:              | See section 2.4.  |                 |                |
| 11.4 | Chronic Toxicity:            | See section 2.5   |                 |                |
| 11.5 | Suspected Carcinogen:        | ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel Fuel)   |                 |                |
| 11.6 | Reproductive Toxicity:       | This product is not reported to cause reproductive toxicity in humans.  |                 |                |
|      | Mutagenicity:                | This product is not reported to produce mutagenicity 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 2.3   |                 |                |
| 11.8 | Biological Exposure Indices: | NA  |                 |                |
| 11.9 | Physician Recommendations:   | Treat symptomatically.  |                 |                |

## 12. ECOLOGICAL INFORMATION


|      |                              |  |
|------|------------------------------|--|
| 12.1 | Environmental Stability:     | Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations. At least 25% of the components in this product show limited biodegradation based on OECD 301-type test data. 25% or greater of the components potentially bioconcentrate, based on octanol/water coefficients. |
| 12.2 | Effects on Plants & Animals: | An environmental fate analysis has not been conducted on this specific product. However, plants and animals may experience harmful or fatal effects when coated with petroleum-based products.   |
| 12.3 | Effects on Aquatic Life:     | LC <sub>50</sub> (fish, 96h): < 10 mg/L; EC <sub>50</sub> (algae, 48h): < 10 mg/L  |

## 13. DISPOSAL CONSIDERATIONS



|      |                         |   |
|------|-------------------------|---|
| 13.1 | Waste Disposal:         | Dispose of in accordance with federal, state, provincial 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, SCT, ADGT, ADR and the CTDGR.

|      |                      |  |   |
|------|----------------------|--|---|
| 14.1 | 49 CFR (GND):        | NOT REGULATED  |  |
| 14.2 | IATA (AIR):          | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |
| 14.3 | IMDG (OCN):          | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |
| 14.4 | TDGR (Canadian GND): | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |
| 14.5 | ADR/RID (EU):        | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |
| 14.6 | SCT (MEXICO):        | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |
| 14.7 | ADGR (AUS):          | UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ETHYLHEXYL NITRATE), 9, III, MARINE POLLUTANT |   |

## 15. REGULATORY INFORMATION

|      |                                   |  |   |
|------|-----------------------------------|--|---|
| 15.1 | SARA Reporting Requirements:      | This product does not contain any substances subject to Section 313 reporting requirements.  |   |
| 15.2 | SARA Threshold Planning Quantity: | NA   |   |
| 15.3 | TSCA Inventory Status:            | All components of this product are listed in the TSCA Inventory or are exempt.   |   |
| 15.4 | CERCLA Reportable Quantity (RQ):  | NA   |   |
| 15.5 | Other Federal Requirements:       | NA   |   |
| 15.6 | Other Canadian Regulations:       | This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS 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 D2B (Other Toxic Effects).  |  |
| 15.7 | State Regulatory Information:     | 2-Ethylhexanol is found on the following state criteria list Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), and Pennsylvania Right-to-Know List (PA).<br>No 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 (CA), 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 not listed in Annex I of EU Directive 67/548/EEC. Irritant (Xi).<br><u>Risk Phrases (R):</u> R65 – Harmful: may cause lung damage if swallowed.<br><u>Safety Phrases (S):</u> (2-)23-24-62 - Keep out of the reach of children. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label where possible.  |  |

## 16. OTHER INFORMATION

|      |                      |  |  |
|------|----------------------|--|--|
| 16.1 | Other Information:   | <p><b>WARNING! HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION.</b> Harmful if swallowed. May cause an allergic skin reaction. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritation persists get medical advice/attention. <b>KEEP OUT OF REACH OF CHILDREN.</b></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 &amp; Worldpac's 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.</p> |  |
| 16.4 | Prepared for:        | <p><b>Worldpac, Inc.</b><br/>37137 Hickory Street<br/>Newark, CA 94560 USA<br/>Tel: +1 (510) 608-5525<br/>Fax: +1 (510) 742-9262<br/><a href="http://www.worldpac.com">http://www.worldpac.com</a></p>   |  |
| 16.5 | Prepared by:         | <p><b>ShipMate, Inc.</b><br/>P.O. Box 787<br/>Sisters, OR 97759-0787 USA<br/>Tel: +1 (310) 370-3600<br/>Fax: +1 (310) 370-5700<br/><a href="http://www.shipmate.com">http://www.shipmate.com</a></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:

|                |                                  |
|----------------|----------------------------------|
| <b>CAS No.</b> | Chemical Abstract Service Number |
|----------------|----------------------------------|

### EXPOSURE LIMITS IN AIR:

|              |   |
|--------------|---|
| <b>ACGIH</b> | American Conference on Governmental Industrial Hygienists |
| <b>TLV</b>   | Threshold Limit Value                                     |
| <b>OSHA</b>  | U.S. Occupational Safety and Health Administration        |
| <b>PEL</b>   | Permissible Exposure Limit                                |
| <b>IDLH</b>  | Immediately Dangerous to Life and Health                  |

### FIRST AID MEASURES:

|            |  |
|------------|--|
| <b>CPR</b> | 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:

|          |  |
|----------|--|
| <b>A</b> |  |
| <b>B</b> |  |
| <b>C</b> |  |
| <b>D</b> |  |
| <b>E</b> |  |
| <b>F</b> |  |

|          |  |
|----------|--|
| <b>G</b> |  |
| <b>H</b> |  |
| <b>I</b> |  |
| <b>J</b> |  |
| <b>K</b> |  |
| <b>X</b> | 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:

|             |                                    |
|-------------|------------------------------------|
| <b>NA</b>   | Not Available                      |
| <b>NR</b>   | No Results                         |
| <b>NE</b>   | Not Established                    |
| <b>ND</b>   | Not Determined                     |
| <b>ML</b>   | Maximum Limit                      |
| <b>SCBA</b> | Self-Contained Breathing Apparatus |

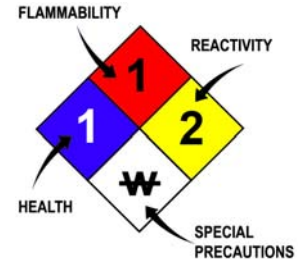
### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

### FLAMMABILITY LIMITS IN AIR:

|                                 |   |
|---------------------------------|---|
| <b>Autoignition Temperature</b> | Minimum temperature required to initiate combustion in air with no other source of ignition   |
| <b>LEL</b>                      | Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source  |
| <b>UEL</b>                      | 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:

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



### TOXICOLOGICAL INFORMATION:

|   |   |
|---|---|
| <b>LD<sub>50</sub></b>  | Lethal Dose (solids & liquids) which kills 50% of the exposed animals |
| <b>LC<sub>50</sub></b>  | Lethal concentration (gases) which kills 50% of the exposed animal    |
| <b>ppm</b>  | Concentration expressed in parts of material per million parts        |
| <b>TD<sub>01</sub></b>  | Lowest dose to cause a symptom  |
| <b>TCLo</b>   | Lowest concentration to cause a symptom                               |
| <b>TD<sub>01</sub>, LD<sub>01</sub>, &amp; LD<sub>02</sub> or TC, TC<sub>01</sub>, LC<sub>01</sub>, &amp; LC<sub>02</sub></b> | Lowest dose (or concentration) to cause lethal or toxic effects       |
| <b>IARC</b>   | International Agency for Research on Cancer                           |
| <b>NTP</b>  | National Toxicology Program   |
| <b>RTECS</b>  | Registry of Toxic Effects of Chemical Substances                      |
| <b>BCF</b>  | Bioconcentration Factor   |
| <b>TL<sub>m</sub></b>   | Median threshold limit  |
| <b>log K<sub>OW</sub> or log K<sub>OC</sub></b>   | Coefficient of Oil/Water Distribution                                 |

### REGULATORY INFORMATION:

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

### EC (67/548/EEC) INFORMATION:

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