1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): MEK/Acetone Blend
SYNONYMS: Industrial Solvent
CHEMICAL SHIPPING NAME/CLASS: Flammable Liquids, n.o.s. (Methyl Ethyl Ketone, Acetone)
U.N. NUMBER: UN 1993
MANUFACTURER'S NAME: Emerald Services, Inc.
ADDRESS: 1825 Alexander Ave., Tacoma, WA 98421 USA
EMERGENCY PHONE: (800) 424-9300 (CHEMTREC - #7619)
BUSINESS PHONE: (206) 832-3225
DATE OF PREPARATION: December 4, 2006
DATE OF REVISION: March 8, 2012

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Danger!

Product Description: This product is a clear colorless liquid with a characteristic solvent odor.

Health Hazards: Can cause serious or fatal complications if swallowed. Can cause eye and skin irritation upon contact.

Flammability Hazards: Flammable Liquid

Reactivity Hazards: This product is not reactive.

Environmental Hazards: Release of the product may cause adverse effects to the aquatic environment.

Emergency Recommendations: Emergency responders must have personal protective equipment and fire protection appropriate for the situation to which they are responding.

EU LABELING AND CLASSIFICATION: This product meets the definition of a hazardous substance or preparation according to EU Regulations (EC) No 1272/2008.

INDEX NUMBER:
EC# 201-159-0 Annex 1 Index # 606-002-00-3
EC# 200-662-2 Annex 1 Index # 606-001-00-8
EC# 203-625-9 Annex1 Index# 601-021-00-3
EC# 232-453-7 Annex 1 Index # 649-263-00-9
EC# 200-659-6 Annex 1 Index# 603-001-00-X
EC# 200-661-7 Annex1 Index# 603-117-00-0

GHS CLASSIFICATIONS:
Flammable Liquid Category 3
Reproductive Hazard Category 2
Aspiration Hazard Category 1B
Skin Irritant Category 2
Acute Skin Toxicity Category 4
Carc. Category 1B

SIGNAL WORD: Danger

Hazardous Material Identification System

Scale: 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe  * = Chronic hazard
HAZARD STATEMENT:
H225 Highly Flammable Liquid and Vapor
H304 May be fatal if swallowed and enters airways.
H332 Harmful if inhaled
H350 May cause cancer
H373 Causes damage through prolonged or repeated exposure
H315 Causes skin irritation.
H336 May cause drowsiness and dizziness

PREVENTION STATEMENT:
P201 Obtain special instructions before use.
P202 Do not handle until all safety measures have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. – No Smoking
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P314 Get medical advice/attention if you feel unwell.
P331 Do NOT induce vomiting.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or Doctor/Physician.
RESPONSE STATEMENT:
P363 Wash contaminated clothing before reuse.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 IF skin irritation or rash occurs: Get medical advice/attention.

HEALTH EFFECTS OR RISKS FROM EXPOSURE:
ACUTE:
INHALATION: High concentrations are irritating to the respiratory tract; may cause headache, dizziness, nausea, vomiting and malaise.
SKIN: Brief contact may cause slight irritation;
EYES: High vapor concentration or contact may cause irritation and discomfort.
INGESTION: May result in vomiting; aspiration of vomitus into the lungs must be avoided; DO NOT induce vomiting.
Minute amounts aspirated into the lungs can produce severe lung injury, chemical pneumonitis, pulmonary edema or death.
CHRONIC: Prolonged skin contact may cause moderate irritation or dermatitis. This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>WT%</th>
<th>CAS#</th>
<th>EINECS</th>
<th>Hazard Classification</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>40 – 60%</td>
<td>78-93-3</td>
<td>201-159-0</td>
<td>[F] Flammable, [Xn] Harmful</td>
<td>R11, R36, R66, R67</td>
</tr>
<tr>
<td>Aliphatic Naphtha</td>
<td>1 - 10%</td>
<td>8032-32-4</td>
<td>232-453-7</td>
<td>[T] Toxic</td>
<td>R45, R46, R65</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>1 – 2%</td>
<td>67-63-0</td>
<td>200-661-7</td>
<td>[F] Flammable, [Xi] Irritant</td>
<td>R11, R36, R67</td>
</tr>
<tr>
<td>Balance of other ingredients is less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250: 2000.
4. FIRST-AID MEASURES

SKIN EXPOSURE: If this product contaminates the skin, begin decontamination with running water. Minimum flushing is for 5 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. The contaminated individual should seek medical attention if any adverse effect occurs.

EYE EXPOSURE: If this product enter the eyes, open contaminated individual’s eyes while under gently running water. Use sufficient force to open eyelids. Remove contact lenses if worn. Have contaminated individual "roll" eyes. Minimum flushing is for 15 minutes. Contaminated individual must seek medical attention if irritation develops or persists or if visual changes occur.

INHALATION: If vapors/mists generated by this product are inhaled, remove contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions. SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT induce vomiting; if vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. SEEK IMMEDIATE MEDICAL ATTENTION.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing skin and respiratory conditions may be more susceptible to effects of this material.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: -4°F (-20°C) TCC
AUTOIGNITION TEMPERATURE: Not Established
FLAMMABLE LIMITS (in air by volume, %): Lower 1.1% Upper 7.1%
FIRE EXTINGUISHING MATERIALS: Use fire extinguishing methods listed below:
  - Water Spray: Yes
  - Carbon Dioxide: Yes
  - Foam: Yes
  - Dry Chemical: Yes
  - Halon: Yes
  - Other: Any "C" Class
UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers can explode due to buildup of pressure when exposed to extreme heat.
  - Explosion Sensitivity to Mechanical Impact: No
  - Explosion Sensitivity to Static Discharge: Yes
SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Evacuate unprotected personnel from the area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in section 8. Contain and recover liquid if possible. Use non-sparking tools and equipment. Cover or absorb spilled liquid with sand, earth or other inert material. Clean up spill immediately and place in appropriate containers. Do not discharge to sewers and surface waters. Notify authorities if entry occurs. Remove all sources of ignition.
U.S. Regulations (CERCLA) requires reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid
breathing vapors/mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

**STORAGE AND HANDLING PRACTICES:** Protect against physical damage. Store in a cool, dry well-ventilated location away from heat or ignition sources. Keep out of direct sunlight. Containers should be bonded and grounded for transfers to avoid static sparks. Keep containers tightly closed. Containers of this material may be hazardous when empty since they retain residues. Observe all warnings and precautions listed for the product.

### 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>ACGIH TLV</th>
<th>OSHA TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>40 – 60%</td>
<td>200 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td>Acetone</td>
<td>40 – 60%</td>
<td>500 ppm</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Toluene</td>
<td>10 - 15%</td>
<td>50 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td>Aliphatic Naphtha</td>
<td>1 -10%</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Methanol</td>
<td>1 – 5%</td>
<td>200 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>1 – 2%</td>
<td>200 ppm</td>
<td>400 ppm</td>
</tr>
</tbody>
</table>

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use a chemical fume hood or local exhaust ventilation, and process enclosure if necessary, to control exposure. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

**RESPIRATORY PROTECTION:** Maintain concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

**EYE PROTECTION:** Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area. Contact lenses pose a special hazard; Do not wear contact lenses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

**HAND PROTECTION:** Use chemically-resistant gloves when handling this product. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

**BODY PROTECTION:** Use body protection appropriate for task (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee’s feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

### 9. PHYSICAL and CHEMICAL PROPERTIES

- **VAPOR DENSITY:** No Data
- **% VOLATILE:** 100%
- **SOLUBILITY IN WATER:** Slight
- **VAPOR PRESSURE:** No Data
- **ODOR:** Characteristic
- **APPEARANCE and COLOR:** Clear liquid with a characteristic odor

- **EVAPORATION RATE (n-BuAc=1):** No Data
- **MELTING/FREEZING POINT:** -95°C
- **BOILING POINT:** 131°F (55°C)
- **pH:** Not Applicable
- **SPECIFIC GRAVITY:** .81 - .97

### 10. STABILITY and REACTIVITY

**STABILITY:** Stable under conditions of normal storage and use.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition produces carbon dioxide and carbon monoxide.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Reacts violently with strong oxidants causing fire and explosion hazard.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Will not occur.
CONDITIONS TO AVOID: Incompatible materials, ignition sources.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:
CAS# 78-93-3
Draize test, rabbit, eye: 80 mg; Draize test, rabbit, skin: 500 mg/24H Moderate; Draize test, rabbit, skin: 402 mg/24H Mild;
Inhalation, mouse: LC50 = 32 gm/m3/4H; Inhalation, rat: LC50 = 23500 mg/m3/8H;
Oral, mouse: LD50 = 3000 mg/kg; Oral, rat: LD50 = 2737 mg/kg; Skin, rabbit: LD50 = 6480 mg/kg;
CAS# 67-64-1
Dermal, guinea pig: LD50 = >9400 uL/kg; Draize test, rabbit, eye: 20 mg Severe; Draize test, rabbit, eye: 20 mg/24H Moderate; Draize test, rabbit, eye: 10 uL Mild; Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 44 gm/m3/4H; Inhalation, rat: LC50 = 50100 mg/m3/8H; Oral, mouse: LD50 = 3 gm/kg; Oral, rabbit: LD50 = 5340 mg/kg; Oral, rat: LD50 = 5800 mg/kg;
CAS# 108-88-3
Oral rat LD50: 636 mg/kg; skin rabbit LD50: 14100 uL/kg; inhalation rat LC50: 49 gm/m3/4H; Irritation data: skin rabbit, 500 mg, Moderate; eye rabbit, 2 mg/24H, Severe. Investigated as a tumorigen, mutagen, reproductive effector.

CARCINOGENICITY:
This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
ENVIRONMENTAL STABILITY: This material will rapidly evaporate to the air if released onto the environment. No other data available at this time.
CHEMICAL EFFECT ON PLANTS, ANIMALS AND AQUATIC LIFE: No Data Available

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

14. TRANSPORTATION INFORMATION

US DOT, IATA, IMO, ADR:
U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS: This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.
PROPER SHIPPING NAME: FLAMMABLE LIQUIDS, n.o.s. (Methyl Ethyl Ketone, Acetone)
HAZARD CLASS NUMBER and DESCRIPTION: CLASS 3,
UN IDENTIFICATION NUMBER: UN 1993
PACKING GROUP: II
DOT LABEL(S) REQUIRED: Flammable Class 3
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER: 128
RQ QUANTITY: 1000 Lbs
MARINE POLLUTANT: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is considered as dangerous goods.
INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is considered as dangerous goods.
EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is considered by the United Nations Economic Commission for Europe to be dangerous goods.
15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows:
This material contains Toluene (CAS# 108-88-3, <30%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): CAS# 108-88-3: 1000 lb final RQ; 454 kg final RQ; CAS# 78-93-3: 5000 lb final RQ; 2270 kg final RQ; CAS# 67-64-1: 5000 lb final RQ; 2270 kg final RQ; CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ.

U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory or are exempted from listing.

OTHER U.S. FEDERAL REGULATIONS:

Clean Air Act:
CAS# 108-88-3 is listed as a hazardous air pollutant (HAP).

Clean Water Act:
CAS# 108-88-3 is listed as a Hazardous Substance under the CWA; CAS# 108-88-3 is listed as a Priority Pollutant under the Clean Water.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):
Ingredients within this product are on the Proposition 65 Lists.
WARNING: This product contains Toluene, a chemical known to the state of California to cause developmental reproductive toxicity.
WARNING: This product contains Ethylbenzene, a chemical known to the state of California to cause cancer.
WARNING: This product contains Ethanol, a chemical known to the state of California to cause developmental reproductive toxicity.
WARNING: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Benzene
WARNING: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Benzene
WARNING: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Benzene, Formaldehyde

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are on the DSL Inventory, or are exempted from listing.

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Class B Division 2 Flammable Liquid, Class D Division 2A Materials causing serious toxic effects.

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION: This product meets the definition of the following hazard class as defined by the European Economic Community Guidelines.

EU CLASSIFICATION: [F] Flammable; [Xn] Harmful

EU RISK PHRASES: R11: Highly flammable; R20/21: Harmful by inhalation and in contact with skin; R36/38: Irritating to skin and eyes; R65: Damaging to lungs when swallowed; R67: Vapors may cause drowsiness and dizziness.

EU SAFETY PHRASES: S24/25: Avoid contact with skin and eyes. S46: If swallowed, seek medical advice immediately and show this container or label; S51: Use only in a well ventilated area; S62: If swallowed, do not induce vomiting; seek immediate medical advice.
AUSTRALIAN INFORMATION FOR PRODUCT: The components of this product are listed on the International Chemical Inventory list.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

JAPANESE ENCS INVENTORY: The components of this product are on the ENCS Inventory as indicated in the section on International Chemical Inventories, below.

POISONOUS AND DELETERIOUS SUBSTANCES CONTROL LAW: No component of this product is a listed Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

INTERNATIONAL CHEMICAL INVENTORIES:
Listing of the components on individual country Chemical Inventories is as follows:
- Asia-Pac: Listed
- Australian Inventory of Chemical Substances (AICS): Listed
- Korean Existing Chemicals List (ECL): Listed
- Japanese Existing National Inventory of Chemical Substances (ENCS): Listed
- Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed
- Swiss Giftliste List of Toxic Substances: Listed
- U.S. TSCA: Listed

16. OTHER INFORMATION

PREPARED BY: Paul Eigbrett – (MSDS Authoring PLUS)
DATE OF PRINTING: March 8, 2012

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. Emerald Services, Inc. assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are no adhered to as stipulated in the data sheet. Furthermore, Emerald Services, Inc. assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed.

END OF MSDS SHEET