**SECTION I**

**TRADE NAME: K-33 (60%) Wood Preservative**

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OTHER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic Acid (expressed as As₂O₅)</td>
<td>7778-39-4</td>
<td>.5 mg/M³ as As</td>
<td>.01 mg/M³ as As</td>
<td>RQ = 1 pound</td>
<td>20.00</td>
</tr>
<tr>
<td>Chromic Acid (water soluble)</td>
<td>1333-82-0</td>
<td>.1 mg/M³ as Cr</td>
<td>.05 mg/M³ as Cr</td>
<td>RQ = 10 pounds</td>
<td>29.90</td>
</tr>
<tr>
<td>Cupric Oxide</td>
<td>1317-39-1</td>
<td>1 mg/M³ as Cu</td>
<td>1 mg/M³ as Cu</td>
<td>RQ = N/A</td>
<td>10.50</td>
</tr>
</tbody>
</table>

**ADDITIONAL INFORMATION**
- The OSHA PEL for Chromium is the Acceptable Ceiling Concentrate Limit.
- Pesticide Applicators are exempt from the OSHA Arsenic Standard 29 CFR 1910.18.

**SECTION III - CHEMICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>BOILING POINT &gt; 100 ºC</th>
<th>MELTING POINT N/A</th>
<th>FREEZING POINT N/A</th>
<th>SPECIFIC GRAVITY (H₂O = 1) 1.83</th>
<th>PERCENT VOLATILE BY VOLUME 40% (water)</th>
<th>THEORETICAL VOC CONTENT (PERCENT OF WEIGHT) N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEIGHT PER GALLON</td>
<td>pH: &lt; 1</td>
<td>VAPOR PRESSURE N/A</td>
<td>VAPOR DENSITY N/A</td>
<td>DENSITY N/A</td>
<td>EVAPORATION RATE BASIS (N-BUAC) = 1 N/A</td>
</tr>
<tr>
<td>15.3 pounds/gallon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SOLUBILITY IN WATER:** 100%
**REACTIVITY IN WATER:** N/A
**APPEARANCE AND ODOR:** Dark red-orange liquid. No odor.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<table>
<thead>
<tr>
<th>FLASH POINT N/A</th>
<th>METHOD N/A</th>
<th>FLAMMABLE LIMITS IN AIR (%)</th>
<th>AUTOIGNITION TEMPERATURE N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NFPA CODES</strong></td>
<td>HEALTH 3</td>
<td>HMIS CODES: HEALTH 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FLAMMABILITY 0</td>
<td>FLAMMABILITY 0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REACTIVITY 1</td>
<td>REACTIVITY 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OTHER</td>
<td>PROTECTION B*</td>
<td></td>
</tr>
</tbody>
</table>

**EXTINGUISHER MEDIA:** Water fog and/or carbon dioxide.

*See personal protection index on page 4.*
SPECIAL FIRE FIGHTING PROCEDURES: This product will not burn; 60% aqueous solution. When heated to decomposition, arsenic may be emitted. If this material is involved in a fire or explosion, carbon dioxide or water may be used as an extinguishing agent. Wear complete fire service protection equipment, including full-face MSHA/NIOSH approved self-contained breathing apparatus. For further information regarding protective equipment, emergency responders should refer to 29CFR Appendix B to 1910.120 and the NFPA standards on chemical protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Chromic acid content of this product is a strong oxidizing agent; contact with strong reducing agents may cause an explosion. May cause fire on contact with combustible materials. Closed containers may explode when exposed to extreme heat (fire).

SECTION V - REACTIVITY DATA

IS THIS CHEMICAL STABLE UNDER NORMAL CONDITIONS OF HANDLING/STORAGE (Y/N)? Y
CONDITIONS TO AVOID (REGARDING STABILITY): Reducing Agents
INCOMPATIBILITY (MATERIALS TO AVOID): Strong reducing agents. Aluminum and zinc in an acid medium.
HAZARDOUS DECOMPOSITION PRODUCTS: Under certain conditions where aluminum and zinc (e.g. galvanized steel) are present, arsine gas may be generated.
HAZARDOUS POLYMERIZATION POSSIBLE (Y/N)? N
CONDITIONS TO AVOID (REGARDING POLYMERIZATION): N/A

SECTION VI - HEALTH HAZARDS

ROUTES OF ENTRY: The principal routes of exposure for this solution are by skin or eye contact. If the pesticide application process generates mist or particles, inhalation is an additional significant route of exposure. This solution is highly corrosive, as indicated by its pH. Skin or eye contact may result in severe burns. Chronic skin exposure may result in skin ulcers. Inhalation of this solution is highly irritating, and acute exposure by inhalation may result in chemical pneumonitis.

SIGNS AND SYMPTOMS OF ACUTE OVEREXPOSURE: Highly irritating to skin and eyes. Repeated dermal exposure may cause dermatitis. Toxic by ingestion, causes gastroenteritis, esophageal pain, vomiting and anuria or oliguria.

CHRONIC OVEREXPOSURE: Repeated dermal exposure may cause dermatitis.
CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?: N
NATIONAL TOXICOLOGY PROGRAM (Y/N): N
IARC MONOGRAPHS (Y/N): N
OSHA (Y/N): N
(For CARCINOGEN information, see Chronic Effects Notes following the First Aid Section.)

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Individuals with an existing (or history of) disease of the skin, kidney, liver, lungs or nervous system may be at greater risk of developing either acute or chronic health effects.

TOXICOLOGICAL INFORMATION: Oral LD50 = > 50 mg/Kg; Dermal LD50 = < 200 mg/Kg

EMERGENCY AND FIRST AID PROCEDURES

1. INHALATION: For acute inhalation, remove the victim from exposure, restore breathing and seek medical attention immediately.
2. EYE CONTACT: Immediately flush with large quantities of water. Seek medical attention as soon as possible.
3. SKIN CONTACT: Immediately flush skin with large volumes of water. Seek medical attention as soon as possible.
4. INGESTION: Immediately seek medical attention; do not induce vomiting to an unconscious person. If conscious, give one glass of milk, preferably containing 2 ounces of milk of magnesia or 3 egg whites, or give lime water or 1 tablespoon salt in warm water; induce vomiting.

NOTES TO PHYSICIAN: Treat for arsenic pentoxide (As₂O₅) and chromium trioxide (CrO₃) exposure. Severe arsenic poisoning from occupational exposure is unlikely. If it should occur, administer BL (dimercaprol) 10% in oil, IM, 3 mg/kg for each injection - day 1 and 2, every four hours; day 3, every 6 hours; day 4-14, every 12 hours. Consider gastric lavage (if vomiting has not already occurred).

CHRONIC EFFECTS: IARC, NTP and OSHA do not consistently distinguish among arsenic or chromium compounds, but list inorganic arsenic and chromium and certain specific chromium compounds as human carcinogens. Such listings have been based upon cancer in human populations following long term consumption of inorganic trivalent arsenic, inhalation and skin contact with inorganic trivalent arsenical compounds and the combined inhalation of arsenic trioxide, sulfur dioxide and other particulate from ore smelting in arsenic trioxide production. In 1993, ACGIH listed “Arsenic, elemental [7440-38-2] and inorganic compounds (except Arsenite), as As” as a confirmed human carcinogen. In addition, cancers in humans have followed long term occupational exposure to certain non-water soluble hexavalent chromium. This product does not contain trivalent arsenic or non-water-soluble hexavalent chromium compounds. Furthermore, epidemiology studies and cross sectional health studies of treating plant workers would indicate that this product is not a carcinogen when used in accordance with customary practices found in the wood preserving industry.

For pesticide applicators, read and understand the label thoroughly. The EPA PEL program is part of the label.
SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

UNITED STATES DEPARTMENT OF TRANSPORTATION  SHIPPING DESCRIPTION:
Corrosive liquid, toxic, n.o.s., 8, UN2922, PGIII (Arsenic Acid, Chromic Acid), RQ

CANADA’S TRANSPORTATION OF DANGEROUS GOODS SHIPPING DESCRIPTION:
Corrosive liquid, toxic, n.o.s., (Arsenic Acid, Chromic Acid), Class 8, (6.1), UN2922, PGIII, RQ

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:  Engineering controls are the preferred method for controlling exposure to chemicals. If engineering controls are not feasible, then personal protective equipment should be utilized. Read Osmose Operations manual. OTHER PRECAUTIONS  Launder contaminated clothing before reuse. If interior of shoes are contaminated, either directly or through penetration, delayed skin burns may occur, therefore discard.  READ PRODUCT LABEL!

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  Avoid contact with solution. Prevent spread of the spill or leak. Recover or neutralize free standing liquid with Osmose Neutralizing compound or sawdust. Collect absorbent and contaminated soil in DOT approved containers. This material is toxic to fish and other wildlife, do not allow it to contaminate waterways. Individuals involved in clean-up should be protected from contact with the solution by using appropriate protective equipment.

WASTE DISPOSAL METHODS:  Dispose in accordance with all Federal (Resource Conservation and Recovery Act), State and Local laws. Excess chemical and waste material collected from a release or spill must be disposed of in an approved hazardous waste disposal site in accordance with RCRA guidelines. Containers may be triple rinsed and then buried in a sanitary landfill or removed to a drum reclaimer. The RQ for this material is one pound. In the event of a spill exceeding the RQ, the same must be reported to the National Response Center (1-800-424-8802).

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION:  When respiratory exposure can exceed 0.01 mg/M³, 29 CFR 1910.1018 states that a half-mask air purifying respirator equipped with high efficiency particulate filters is recommended. When environmental airborne concentrations are greater than this level, consult 29 CFR 1910.1010 for guidelines and appropriate respiratory protection. Read product label.

VENTILATION REQUIREMENTS:  As necessary in order not to exceed PEL’s.

LOCAL EXHAUST:  Sufficient

PROTECTIVE GLOVES:  29 CFR 1910.1018 requires that workers wear gloves (NBR, natural rubber, neoprene, coated vinyl or PVC).

EYE PROTECTION:  Chemical goggles and face shield.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:  An apron and other equipment necessary to avoid dermal contact.

WORK/HYGIENIC PRACTICES:  Wash hands with soap and water before eating, drinking, smoking, and after work.

SECTION IX -- REGULATORY INFORMATION:

SARA/TITLE III :SECTION 312 - HAZARD CATEGORIES:
Immediate (Acute) Health:  YES  Reactive Hazard:  NO
Delayed (Chronic) Health:  YES  Sudden Release of Pressure:  NO
Fire Hazard:  No

SECTION 302:
N/A - For explanation refer to Part C of the Osmose Health and Safety Manual.

SECTION 304:
If you have a release (outside the boundaries of your facility) which is greater than the RQ values listed in Section II of this MSDS, then report immediately to your Local Emergency Planning Committee and your State Emergency Response Commission in addition to reporting to the National Response Center (800-424-8802).

SECTION 311 & 312:
Storage of Osmose K-33 will subject you to reporting under Section 311 and 312 of SARA. Under Section 311 you are required to submit material safety data sheets to your Local Emergency Planning Committee (LEPC), your State Emergency Response Commission (SERC) and your local fire department. Under Section 312 you are required to submit a Tier I or II Inventory Form to your LEPC, SERC and local fire department by March 1st of each year. Again, refer to the Osmose Health and Safety Manual for more information.

CALIFORNIA PROPOSITION 65:
Osmose K-33-C(50%) contains inorganic arsenic and hexavalent chromium, chemicals known to the State of California to cause cancer. This product contains inorganic oxides of arsenic, which is known to the State of California to cause reproductive toxicity.
HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS)  
PERSONAL PROTECTION INDEX

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  

X  Ask your supervisor for guidance

N/A = Not Applicable

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