TIVA NICKEL-MIRROR
MATERIAL SAFETY DATA SHEET

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	TIVA NICKEL-MIRROR
CHEMICAL NAME/CLASS:	Sodium salt solution
SYNONYM:	Not applicable
PRODUCT USE:	Jewelry Preparation
SUPPLIER/MANUFACTURER'S NAME:	**Cohler Enterprises**
ADDRESS:	101 N. Haven St. Baltimore, MD 21224
24 HOUR EMERGENCY NO.:	800-424-9300 (CHEMTREC)
BUSINESS PHONE:	410-342-1400
DATE OF PREPARATION:	June 1, 2007 (New)

This Material Safety Data Sheet (MSDS) has been developed to address safety concerns of those individuals working this product in industrial/occupational settings. All pertinent health, safety and environmental information has been presented based on ANSI Z400.1-2003, the US Federal OSHA Hazard Communication Standard (29 CFR 1910.1200), Canadian Workplace Hazardous Materials Information System (WHMIS) and Controlled Products Regulations (CPR), and the United Nations Globally Harmonized System (GHS) Standards.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL DESCRIPTION: This product is a clear, green, odorless solution.

WARNINGS (per ANSI Z129.1)

DANGER! CORROSIVE. CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC REACTION. CANCER HAZARD. CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure. MAY AFFECT CENTRAL NERVOUS SYYTEM, LIVER OR KIDNEYS.

PRECAUTIONS (per ANSI Z129.1)

Target Organs: Skin, eyes, respiratory system. May cause skin or respiratory irritation or allergic reaction, resulting in Nickel Itch or chronic eczema. Nickel is a suspected carcinogen. **Instructions:** Do not get in eyes, on skin, or on clothing. Do not breathe mist or vapor. Keep container tightly closed. Use with adequate ventilation. Wear suitable eye, face and hand protection. Wash thoroughly after handling. Store in cold, dry place away from incompatible chemicals. Refer to Material Safety Data Sheet for additional information. FIRST-AID: **In case of contact**: Immediately flush eyes or skin with running water for at least 15 minutes while removing contaminated clothing and shoes. **If inhaled:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **If swallowed:** If the victim is conscious, DO NOT induce vomiting. If victim is fully conscious, give cupful of water. Never give anything by mouth to an unconscious person. **For additional aid:** Get medical attention immediately if symptoms occur. Contact the U.S. Poison Control Center at 1-800-222-1222. **Note to Physician:** Treat symptoms.

2. HAZARDS IDENTIFICATION (continued)

HAZARD SYMBOLS

HMIS: HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

Health	**3**
Flammability	**0**
Physical Hazard	**1**
Protective Equipment	**B/C**

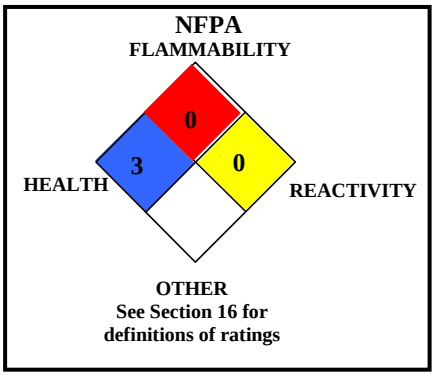
HMIS PERSONAL PROTECTIVE EQUIPMENT RATING: Industrial Use situations: B: Safety glasses and gloves. C: Safety glasses, gloves, and body protection.

WHMIS: CANADIAN WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION SYSTEM SYMBOLS: E: Corrosive Materials.

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

GHS: UNITED NATIONS GLOBALLY HARMONIZED SYSTEM SYMBOLS: See Section 15: REGULATORY INFORMATION.

NFPA: NATIONAL FIRE PROTECION ASSOCIATION:



OSHA REGULATORY STATUS

MSDS should be retained and available for employees and other users of this product. This material is classified as hazardous under OSHA regulations.

POTENTIAL HEALTH EFFECTS

The most significant routes of occupational overexposure to this product are inhalation and contact with skin and eyes. The symptoms of overexposure are described in the following sections.

ACUTE EFFECTS

CONTACT WITH SKIN or EYES: Contact with the solution can cause mild to severe skin irritation and may result in allergic reaction, depending on the duration of exposure. Symptoms of exposure can include redness, pain, and itching. Repeated contact may result in dermatitis (red, cracked skin). Eye contact with the solution can cause moderate to severe irritation, tissue damage, and potentially blindness. Symptoms of exposure can include intense pain, redness, tearing, and visual difficulty.

SKIN ABSORPTION: No component of this product is reported to be absorbed through intact skin.

INGESTION: Ingestion is not anticipated to be a significant route of occupational exposure. Swallowing may cause burns of mouth, throat, and stomach. Symptoms may include vomiting, diarrhea, and reduced blood pressure. Ingestion may cause gastro-intestinal upset, or may affect the central nervous system, liver or kidneys.

INHALATION: Breathing the liquid or mist can cause mild to severe respiratory system irritation, depending on the extent and duration of exposure. Symptoms of exposure can include coughing, sneezing, and tightness in the chest. Severe overexposures can damage the respiratory system and chemical pneumonitis (a potentially fatal condition). Respiratory allergy may occur.

2. HAZARDS IDENTIFICATION (continued)

INJECTION: Accidental injection of this product can cause burning, reddening, and swelling in addition to the wound. Symptoms of such exposure can include those described under "Inhalation", "Contact with Skin or Eyes," and "Ingestion".

CHRONIC EFFECTS: Repeated skin contact may result in dermatitis (red, cracked skin) and scarring. Repeated inhalation of high levels of vapors or mists may result in lung effects (e.g. bronchitis, changes in pulmonary function). Prolonged exposure can cause cancer.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: The primary symptoms of over-exposure include eye and skin irritation (pain, redness or swelling) and the potential for chemical burns to exposed tissue. Coughing, sneezing, severe irritation and pain, or other symptoms of respiratory system irritation may also occur upon inhalation over-exposure. Allergic reaction can result in severe skin itch or breathing difficulty. See Section 11: TOXICOLOGICAL INFORMATION.

POTENTIAL ENVIRONMENTAL EFFECTS

This product does not normally present a significant hazard to aquatic or terrestrial life in small quantities. However, releases of large volumes of product can be harmful or fatal to aquatic life. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. See Section 12: ECOLOGICAL INFORMATION.

3. MATERIAL IDENTIFICATION

CHEMICAL NAME	CAS #	% v/v
Inorganic acid	Proprietary	35 - 45 (w/w)
Nickel compounds	Proprietary	18 - 30
Brighteners	various	< 5
Water		balance

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Take a copy of label and MSDS to physician or health professional with victim.

FIRST AID PROCEDURES

SKIN EXPOSURE: If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Minimum recommended flushing is for 15 minutes. Victim must seek immediate medical attention if any adverse effect occurs.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek immediate medical attention.

INHALATION: If vapors or mists of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing skin disorders, eye problems and respiratory system conditions can be more susceptible to health effects associated with overexposures to this product.

NOTE TO PHYSICIANS

Treat symptoms. Pulmonary function tests may prove useful. Perform endoscopy in all cases of suspected ingestion of corrosive liquids. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

5. FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES

This product is non-combustible. This product does not significantly contribute to the intensity of a fire. Use extinguishing material suitable to the surrounding fire. Not sensitive to mechanical impact under normal conditions. Not sensitive to static discharge under normal conditions.

EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA:

Water Spray:	OK	Carbon Dioxide:	OK
Foam:	OK	Dry Chemical:	OK
Halon:	OK	Other	Any "ABC" Class

UNSUITABLE EXTINGUISHING MEDIA: None known.

PROTECTION OF FIREFIGHTERS

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: When involved in a fire, this material can decompose and produce severely irritating vapors, and toxic gases (e.g., carbon monoxide, carbon dioxide, and oxides of phosphorus and sodium).

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. Isolate from incompatible chemicals (see Section 10: STABILITY AND REACTIVITY). Contaminated equipment should be rinsed thoroughly with water before returning to service. If necessary, rinse with a neutralizer for bases (e.g., citric acid solution).

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Responders should wear the level of protection appropriate to the type of chemical released, the volume or amount of the material spilled, and the location where the incident has occurred. For large-scale releases of this product, minimum Personal Protective Equipment should be Level B: triple-gloves, chemical resistant suit, boots, hard-hat, and Self Contained Breathing Apparatus. Level B protection should also be used when oxygen levels are below 19.5% or are unknown.

ENVIRONMENTAL PRECAUTIONS

Minimize use of water to prevent environmental contamination. Prevent spill or rinsate from contamination of storm drains, sewers, soil or groundwater. Place all spill residues in a suitable container and seal. Dispose of in accordance with applicable U.S. Federal, State, or local procedures or appropriate standards of Canada (see Section 13: DISPOSAL CONSIDERATIONS).

METHODS FOR CONTAINMENT

SPILL AND LEAK RESPONSE: Trained personnel using pre-planned procedures should respond to uncontrolled releases. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.

RESPONSE TO INCIDENTAL RELEASES: Personnel who have received basic chemical safety training can generally handle small-scale releases, such as 1 container of this product. Respond to incidental chemical releases by wearing gloves, goggles, face shield, and appropriate body protection.

RESPONSE TO NON-INCIDENTAL RELEASES: Respond to non-incidental chemical releases of this product, such as the simultaneous puncturing of several containers, by clearing the impacted area and contacting appropriate emergency personnel. Clean up should only be done by qualified personnel.

METHODS FOR CLEAN-UP

Use clean-up materials suitable for bases (e.g., polypads with an acid-neutralizing agent, or Sodium bicarbonate). Contaminated areas and equipment should be thoroughly cleaned (e.g., a triple-rinse with water). Decontaminate all spill response equipment after clean-up operations are concluded. Place all spill residues promptly in an appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations, or the appropriate standards of Canada and its provinces (see Section 13: DISPOSAL CONSIDERATIONS).

OTHER INFORMATION

US regulations require reporting spills of this material that could reach any surface waters. The toll-free phone number for the US National Response Center is 1-800-424-8802.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

HANDLING

All employees who use this material should be trained to handle it safely. Avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Avoid breathing mists or vapors of this product. Use in a well-ventilated location. Do not eat, drink, smoke or use cosmetics while using this product. Use ventilation and other engineering controls to ensure exposure limits are below those stated in Section 8: EXPOSURE CONTROLS – PERSONAL PROTECTION. Remove contaminated clothing immediately.

Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care.

STORAGE

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10: STABILITY AND REACTIVITY). Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Follow practices indicated in Section 6: ACCIDENTAL RELEASE MEASURES. Make certain application equipment is locked and tagged-out safely. Decontaminate equipment: triple rinse with water before maintenance begins. Collect all rinsates and dispose of according applicable U.S. Federal, State, or local procedures or those of Canada and its Provinces.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE GUIDELINES

CHEMICAL NAME	CAS #	Guideline	Value
Inorganic acid	Proprietary	None Established	None Established
Nickel compounds	Proprietary	ACGIH TLV-TWA: OSHA PEL: NIOSH REL-TWA:	0.1 mg/m^3 as Nickel 1 mg/m^3 as Nickel 0.015 mg/m^3 as Nickel

NE = Not Established. See Section 16 for Definitions of Terms Used.

ENGINEERING CONTROLS

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: For specific industrial applications, enhanced eye protection is necessary. Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. If necessary, refer to U.S. OSHA 29 CFR 1910.133, or appropriate Canadian standards.

SKIN PROTECTION: For specific industrial applications, wear chemical impervious gloves (e.g., Neoprene or Nitrile). If necessary, refer to U.S. OSHA 29 CFR 1910.138 or the appropriate standards of Canada.

BODY PROTECTION: For routine industrial applications, chemically protective clothing is not normally needed. If dusts can be generated during the product's use, then wear chemically protective clothing appropriate for task (e.g., Tyvek suit, rubber apron).

RESPIRATORY PROTECTION: None needed under normal conditions of use or handling. Use NIOSH approved respirators if ventilation is inadequate to control dusts. Maintain airborne contaminate concentrations below guidelines listed above. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres use of a full-face-piece pressure/demand Self-Contained Breathing Apparatus or a full face-piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's respiratory protection standard (29 CFR 1910.134).

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (continued)

GENERAL HYGIENE CONSIDERATIONS: The following general hygiene considerations are recognized as common good industrial practices to follow when using this product:

- Do not get in eyes, on skin, or on clothing.
- Do not breathe mist or vapor.
- Keep container tightly closed.
- Use with adequate ventilation.
- Wear suitable eye, face and hand protection.
- Wash thoroughly after handling.
- Store in cold, dry place away from incompatible chemicals.

9. PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1):	Not Available	EVAPORATION RATE (Water =1):	Approx. 1.0
SPECIFIC GRAVITY:	Approx. 1.0	MELTING/FREEZING POINT:	Approx. 0ºC (32ºF)
SOLUBILITY IN WATER:	Soluble.	BOILING POINT:	Approx. 100ºC (212ºF)
VAPOR PRESSURE, mm Hg @ 20°C:	Approx. 17.5	pH:	4
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT)			Not available.
PHYSICAL STATE, APPEARANCE AND COLOR	Clear, green, odorless solution.		

HOW TO DETECT THIS SUBSTANCE (warning properties): Litmus paper can be used to confirm the pH of this solution.

CHEMICAL PROPERTIES

ODOR THRESHOLD:	Not applicable.		
VOC, less water and exempt:	Not applicable.		
Weight % VOC:	Not applicable.		
FLASH POINT: Not applicable.		AUTOIGNITION TEMPERATURE:	Not applicable.
FLAMMABLE LIMITS (in air by volume, %):	Not applicable.		
Lower:	Upper:		

10. STABILITY and REACTIVITY

CHEMICAL STABILITY

Stable under normal circumstances of use and handling.

CONDITIONS TO AVOID

Avoid contact with incompatible chemicals and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS:

This product is not compatible with strong acids, strong oxidizers, and water-reactive substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition of this product can generate severely irritating vapors and toxic gases (e.g., carbon monoxide, carbon dioxide, phosphorus and sodium-containing substances).

POSSIBILITY OF HAZARDOUS REACTIONS

This product is not expected to undergo hazardous polymerization, decomposition, condensation or self-reactivity.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA

The following toxicology information is available for components greater than 1% in concentration.

INORGANIC ACID
Oral rat LD_{50}: 2660 mg/kg
Oral woman LDLo: 200 mg/kg
May cause reproductive harm.

NICKEL COMPOUNDS
Oral rat LD_{50}: 105 mg/kg
Oral rat LD_{50}: 264 mg/kg

SUSPECTED CANCER AGENT

The following table summarizes the carcinogenicity listing for the components of this product. "NO" indicates that the substance is not considered to be, or suspected to be, a carcinogen by the listed agency; see section 16 for definition of other ratings.

CHEMICAL	IARC	NTP	NIOSH	ACGIH	OSHA	CA PROP 65
INORGANIC ACID	No	No	No	No	No	No
NICKELCOMPOUNDS	YES, 1	YES	No	A4	No	YES

ADDITIONAL TOXICOLOGY DATA

IRRITANCY OF PRODUCT: This product is irritating to contaminated tissue and can cause injury depending on the extent and duration of contact.

SENSITIZATION TO THE PRODUCT: Soluble Nickel compounds are reported to be sensitizers.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: None.

REPRODUCTIVE TOXICITY INFORMATION: When used as directed, this product is not expected to cause any human reproductive effects. Listed below is information concerning the effects of this product's components obtained during clinical testing on microorganisms and/or human and animal tissues.

Mutagenicity: Exposures to components of this product are reported to cause mutagenic effects in microorganisms and/or animal tissue studies.

Embryotoxicity: Exposures to components of this product are reported to cause embryotoxic effects.

Teratogenicity: Exposures to components of this product are reported to cause teratogenic effects in microorganisms or animal studies.

Reproductive Toxicity: Exposures to components of this product are reported to cause adverse reproductive effects in microorganisms or animal studies.

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURES INDICES (BEIs): There are no BEI's established for any component of this product at this time.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ECOTOXICITY

This product can be harmful to terrestrial plant and animal life if large volumes of it are released into the environment. Refer to Section 11: TOXICOLOGICAL INFORMATION, for specific animal data. This product may also be harmful to animal life if large volumes of it are released into an aquatic environment. The following aquatic toxicity data are available for components of this product:

INORGANIC ACID
EC_{50} (*Daphnia magna*); 48 hours, >100 mg/L
EC_{50} Water flea; 48 hours 115 mg/L (static)

NICKEL COMPOUNDS
LC_{50} for various fish reports in the 10 – 100 mg/L range for 96 hour exposure.

PERSISTENCE/DEGRADABILITY

Nickel compounds are persistent in the environment.

BIOACCUMULATION/ACCUMULATION

There is no accumulation data for any component of this product at this time.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Recover or recycle if possible. **Industrial Use:** Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada.

EPA WASTE NUMBER: This product, as sold, is not a RCRA regulated waste; however, the specific RCRA codes depend on the exact nature of the discarded material.

14. TRANSPORTATION INFORMATION

BASIC SHIPPING DESCRIPTION

This product is not hazardous per 49 CFR 172.101, the U.S. Department of Transportation.

PROPER SHIPPING NAME:	Not regulated
HAZARD CLASS NUMBER and DESCRIPTION:	Not regulated
UN IDENTIFICATION NUMBER:	Not regulated
DOT LABEL(S) REQUIRED:	Not regulated
PACKAGING GROUP:	Not regulated
NORTH AMERICAN RESPONSE GUIDEBOOK NUMBER (2004):	Not regulated
MARINE POLLUTANT:	No component is designated as a DOT Marine Pollutant.

LIMITED QUANITY EXCEPTION: Limited quantities of corrosive materials (Class 8) in Packing Groups II are excepted from labeling, unless offered for transportation or transported by aircraft, and the specification packaging requirements when packaged in combination packagings. For transportation by aircraft, the package must also comply with the applicable requirements of §173.27 of this subchapter and only hazardous materials authorized aboard passenger-carrying aircraft may be transported as a limited quantity. In addition, shipments of these limited quantities are not subject to subpart F (Placarding) of part 172. Each package must conform to the packaging requirements of subpart B and may not exceed 30 kg (66 pounds) gross weight. For corrosive materials in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids

ADDITIONAL INFORMATION

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not considered as dangerous goods, per Transport Canada regulations.

UPS GUIDE FOR SHIPPING GROUND and AIR HAZARDOUS MATERIALS: This product is not hazardous for UPS Shipment.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS

U.S. E.P.A. REPORTING REQUIREMENTS: The following reporting requirements are applicable to components of this product:

CHEMICAL	SECTION 302 EHS (TPQ) (40 CFR 355, Appendix A)	SECTION 304 RQ (40 CFR Table 302.4)	SECTION 313 TRI (threshold) (40 CFR 372.65)
INORGANIC ACID	No	No	No
NICKEL COMPOUNDS	No	No	No

U.S. E.PA. SARA SECTION 311/312 CATEGORIES FOR PRODUCT: Acute health effects. Chronic health effects.

U.S. E.P.A.TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

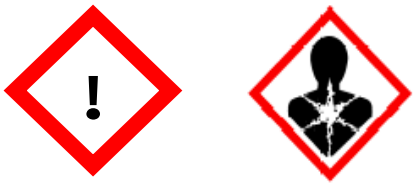
WARNING: This product contains a chemical known to the State of California to cancer.

UNITED NATIONS GLOBAL HARMONIZATION SYSTEM WARNINGS

Signal Word: WARNING!

Classification:

Skin corrosion or Irritation:	Category 2
Serious eye damage-irritation	Category 2A
Skin Sensitization	Category 1
Carcinogenicity	Category 2
Aquatic Toxicity	Category 4



Hazard Statement: Causes skin irritation and serious eye irritation. May cause an allergic skin reaction. Suspected of causing cancer. May cause long lasting harmful effects to aquatic life.

Precautionary Statements: **Prevention:** Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Do not breathe mist. Do not ingest this product. **Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CONTROL CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT Induce vomiting. **Storage:** Store locked up. Store in a cool place. **Disposal:** Dispose of container in accordance with national, state, and local regulations. Symbols: See SECTION2: HAZARDS IDENTIFICATION.

ADDITIONAL CANADIAN REGULATIONS

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are listed on the DSL Inventory.

16. OTHER INFORMATION

PREPARED BY:

ADVANCED CHEMICAL SAFETY, Inc.
7563 Convoy Court
San Diego, CA 92111
(858)-874-5577

DATE OF PRINTING February 5, 2008

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of the most commonly used ones are defined below.

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CAS #: This is the Chemical Abstract Service Number that uniquely identifies each compound

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers can be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL.

NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.

OEL – Occupational Exposure Level – In some cases, specific exposure guidelines have been assigned by industry. These are referred to as "Occupational Exposure Levels."

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can cause permanent injury and can be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). An "*" indicates that the health hazard is chronic. Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Physical Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, **LDo**, **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: **EC** is the effect concentration in water.

Data from several sources are used to evaluate the cancer-causing potential of the material. The sources and ratings are: **IARC** - the International Agency for Research on Cancer; 1 = Carcinogenic to humans, 2A, 2B = Probably carcinogenic to humans, 3 = Unclassifiable as to carcinogenicity in humans, and 4 = Probably not carcinogenic to humans. **NTP** - the National Toxicology Program; K =Known to be a human carcinogen, and R = Reasonably anticipated to be a human carcinogen. **RTECS** - the Registry of Toxic Effects of Chemical Substances. **OSHA** - Occupational Safety and Health Administration and **CAL/OSHA** - California's subunit of the Occupational Safety and Health Administration; Ca = Carcinogen defined with no further categorization. **ACGIH –** American Conference of Governmental Industrial Hygienists; A1 = Confirmed human carcinogen, A2 = Suspected human carcinogen, A3 = Confirmed animal carcinogen with unknown relevance to humans, A4 = Not classifiable as a human carcinogen, and A5 = Not suspected as a human carcinogen. **NIOSH** – U.S. National Institute for Occupational Safety and Health; Ca = Potential occupational carcinogen, with no further categorization. **EPA** – U.S. Environmental Protection; A = Human carcinogen, B = Probable human carcinogen, C = Possible human carcinogen, D = Not classifiable as to human carcinogenicity, E = Evidence of Non-carcinogenicity for humans, K = Known human carcinogen, L = Likely to produce cancer in humans, CBD = Cannot be determined, NL = Not likely to be carcinogenic in humans, and I = Data are inadequate for an assessment of human carcinogenic potential.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations. This section also includes information on the precautionary warnings that appear on a material's industrial package label.