

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union standards

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): ZI-400
SYNONYMS: None
MANUFACTURER'S NAME: Z.I. Chemicals
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Los Angeles, CA 90069-4109
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DATE ISSUED: July 11, 2016
PREVIOUS REVISION DATE: September 14, 2010

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: **Product Description:** This product is a clear yellow liquid with a slight lemon odor. **Health Hazards:** Prolonged exposure may cause irritation to skin, and eyes. Harmful if swallowed. **Flammability Hazards:** Non-Flammable Liquid and Vapors. **Reactivity Hazards:** None known. **Environmental Hazards:** Not expected to have significant environmental effects. **Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire-suppression equipment) suitable for the situation to which they are responding.

EU LABELING AND CLASSIFICATION:

EU DANGEROUS PREPARATIONS DIRECTIVE (DPD) LABELING AND CLASSIFICATION: This product does meet the definition of any hazard class, as defined by the European Union Council Directives 67/548/EEC and 1999/445/EC and subsequent Directives. For information on classification under CLP Regulation (EC) 1271/2008, please refer to section 16 (Other Information).

Classification: [Xi] Irritant

Risk Phrases: R36/38: Irritating to eyes and skin.

Safety Phrases: S36/37: Wear suitable protective clothing and gloves.

S46: If swallowed, seek medical advice immediately and show this container or label.

Annex II Hazard Symbol:



HEALTH HAZARDS OR RISKS FROM EXPOSURE:

Acute Prolonged exposure this product irritate skin. Contact with eyes can cause irritation.

Chronic May cause gastrointestinal tract irritation if swallowed.

Chronic None known

3. COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Potassium Hydroxide 50%	1310-58-5	Not Listed	Not Established	<2%	HAZARD CLASSIFICATION:[Xi] IRRITANT RISK PHRASES: R36/38
Benzenesulfonic Acid	27176-87-0	248-289-4	Not Established	<4%	HAZARD CLASSIFICATION:[Xi] IRRITANT RISK PHRASES: R36/38
Sodium Xylene Sulfonate 40%	1300-72-7	215-090-9	Not Established	<2%	HAZARD CLASSIFICATION NOT CLASSIFIED RISK PHRASES: NONE
Nonionic surfactant	68439-46-3	Not Listed	Not Established	<3%	HAZARD CLASSIFICATION NOT CLASSIFIED RISK PHRASES: NONE
Balance of water and other components. Each of the other hazardous components are present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens)					HAZARD CLASSIFICATION: NOT CLASSIFIED RISK PHRASES: NONE

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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.

See Section 2 for full text of Ingredient Risk Phrases and Safety Phrases

4. FIRST-AID MEASURES

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

EYE CONTACT: If product contacts eye, 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. Seek medical attention if irritation persists.

SKIN CONTACT: Wash contacted area with soap and water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if irritation develops and persists.

INHALATION: If chemical is inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing difficulties continue.

INGESTION: If chemical is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin problems may be aggravated by prolonged contact.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Non-Flammable

AUTOIGNITION TEMPERATURE: Not Applicable

FLAMMABLE LIMITS (in air by volume, %): Lower N.E. Upper N.E.

FIRE EXTINGUISHING MATERIALS: Use method suitable for surrounding fire

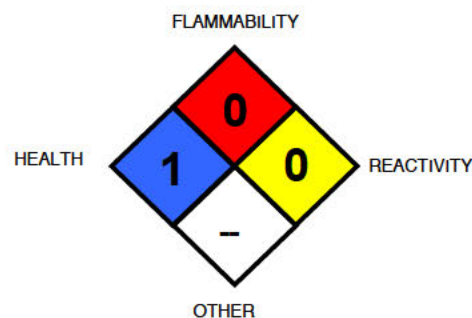
UNUSUAL FIRE AND EXPLOSION HAZARDS: None known

Explosion Sensitivity to Mechanical Impact: Not Sensitive

Explosion Sensitivity to Static Discharge: Not Sensitive

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.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight
2 = Moderate
3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Proper protective equipment should be used. Personnel should be trained for spill response operations. Absorb spilled material using polypads or other suitable absorbent material. Avoid generating mists or sprays. Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Place all spill residue in an appropriate container and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures.

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 mists or sprays generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Store product in properly labeled, closed containers in cool location, away from incompatible materials. Protect from physical damage. Keep containers closed when not in use.

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8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Ensure eyewash/safety shower stations are available near areas where this product is used.

EXPOSURE LIMITS/GUIDELINES:

<u>Chemical Name</u>	<u>CAS#</u>	<u>ACGIH-TLV's</u>	<u>OSHA PEL's</u>	<u>NIOSH- TLV's</u>	<u>Other</u>
Potassium Hydroxide	1310-58-3	2 mg/m ³	Not Established	Not Established	Not Established
Balance of Components		Not Established	Not Established	Not Established	Not Established

Currently, International exposure limits are established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

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: If exposure limits are exceeded, 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. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998) or the regulations of various U.S. States, Canada, EU Member States, or those of Japan. Air-purifying respirators with dust/mist/fume filters are recommended if operations may produce mists or sprays from this product.

EYE PROTECTION: Splash goggles or safety glasses with side shields recommended. 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: Compatible protective gloves recommended. Wash hands after removing gloves. 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. Coveralls, rubber aprons, or chemical protective clothing made from natural rubber are generally acceptable, depending upon the task. 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: NE

SPECIFIC GRAVITY @ 20°C: 1.060 (water=1)

VAPOR PRESSURE: NE mm Hg @ 20°C

ODOR THRESHOLD: Slight

APPEARANCE, ODOR and COLOR: This product is a clear yellow liquid with a slight lemon odor

EVAPORATION RATE (n-BuAc=1): 1

SOLUBILITY IN WATER: Complete

pH: 11.5 – 12.0 (10.5 – 10.90 Canada Only)

10. STABILITY and REACTIVITY

STABILITY: Stable under ordinary conditions of use and storage

DECOMPOSITION PRODUCTS: Oxides of carbon may form when heated to decomposition.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Keep away from strong caustics and strong oxidizing agents.

HAZARDOUS DEPOLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatibles.

11. TOXICOLOGICAL INFORMATION

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TOXICITY DATA: The specific toxicology data available for components greater than 1% in concentration are as follows.

COMPOUND [CAS]	ROUTE	SPECIES	EXPOSURE & DOSE
CAS# 1310-58-3	Oral	Rat, adult	LD 50: 273 mg/kg
	Skin	Std. Draize	Severe

SUSPECTED CANCER AGENT: The components of this product are not listed by agencies tracking the carcinogenic potential of chemical compounds as follows:

Carcinogeny

NTP Regulated NO
IARC Regulated NO
OSHA Regulated NO

IRITANCY OF PRODUCT: Airborne mists of this product can irritate eyes.

SENSITIZATION TO THE PRODUCT: These products are not known to cause human skin or respiratory sensitization.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: The components of this product are not reported to produce mutagenic effects in humans.

Embryotoxicity: The components of this product are not reported to produce embryotoxic effects in humans.

Teratogenicity: The components of this product are not reported to produce teratogenic effects in humans.

Reproductive Toxicity: The components of this product are not reported to produce reproductive effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL FATE: No Data

ENVIRONMENTAL TOXICITY:

This material is not expected to be toxic to aquatic life.

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:

DOT CLASSIFICATION Non Regulated Material

DOT LABELING REQUIREMENTS None

IATA LABELING REQUIREMENTS None

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

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SARA REPORTING REQUIREMENTS

SARA 313 Reporting Requirements: None

MARINE POLLUTANT

This product contains no component listed as a Marine Pollutant under 49 CFR 172.101, Appendix B.

TSCA

All components in this product mixture are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312: Acute Health: Yes; Chronic Health: No; Fire: No; Reactivity: No

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

U.S. TSCA INVENTORY STATUS: All of the components of this product are not listed in the TSCA Inventory.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product does not contain any component above the 0.1% level which is listed as a California Proposition 65 chemical. Note the chemical identity of some or all components present is confidential business information (trade secret) and is being withheld as permitted by 29CFR1910.1200 (i).

CANADIAN REGULATIONS:

CANADIAN DSL/NDL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Not Regulated

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION: This product meets the definition of the following hazard class as defined by the

Classification: [Xi] Irritant

Risk Phrases: R36/38: Irritating to eyes and skin.

Safety Phrases: S36/37: Wear suitable protective clothing and gloves.

S46: If swallowed, seek medical advice immediately and show this container or label.

Annex II Hazard Symbol:



AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

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.

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

U.S. TSCA: Listed

16. OTHER INFORMATION

PREPARED BY: MSDS Authoring Services

DATE OF PRINTING: July 11, 2016

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All chemicals may pose unknown hazards and should be used with cautions. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Z.I. Chemicals assumes no responsibility for the completeness or accuracy of the information contained herein. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and protection of the environment