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**Section 1: IDENTIFICATION**

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**1.1 PRODUCT IDENTIFIER**

**Product Name:** ZL-4C

**Product Code:** Not available.

**1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE**

**Use:** Non-Destructive Testing.

**1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET**

**Name/Address:** Magnaflux  
155 Harlem Avenue,  
Glenview, Illinois  
60025

**Telephone Number:** 847-657-5300

**1.4 EMERGENCY TELEPHONE NUMBER**

**Emergency Telephone Number:** CHEMTREC 800-424-9300

**Date of Preparation:** August 11, 2014 **Version #:** 1.0

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**Section 2: HAZARD(S) IDENTIFICATION**

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**2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012****Hazard class**

Skin irritation 2  
Eye irritation 2A

**2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012****Hazard Pictogram:**

**Signal Word:** Warning

**Hazard Statement:** Causes skin irritation. Causes serious eye irritation.

**Prevention:** Wash hands thoroughly after handling. Wear protective gloves/eye protection/face protection.

**Response:** If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. 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.

**Storage:** Not applicable.

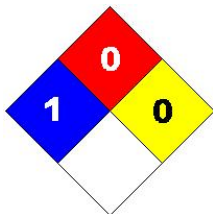
**Disposal:** Not applicable.

## 2.3 ADDITIONAL INFORMATION

**Hazards not otherwise classified:** Not applicable.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

**Mexico Classification:**



**Blue = Health Red = Flammability Yellow = Reactivity White = Special**

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

**WHMIS Classification(s):**

Class D2B - Skin/Eye Irritant

**WHMIS Hazard Symbols:**



**WHMIS Signal Word:** WARNING

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 MIXTURES

Ingredient	UN #	H / F / R / *	CAS No	Wt. %
Nonylphenol ethoxylate	Not available.	Not available.	9016-45-9	10 - 30
Diethylene glycol	Not available.	Not available.	111-46-6	10 - 30
Hexylene glycol	Not available.	1/1/0	107-41-5	1 - 5
Ethylene oxide	UN1040	3/4/3	75-21-8	< 0.1
1,4-Dioxane	UN1165	2/3/1	123-91-1	< 0.1
2-Methoxyethanol	UN1188	2/2/0	109-86-4	< 0.1

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

\* Per NOM-018-STPS-2000

## Section 4: FIRST-AID MEASURES

### 4.1 DESCRIPTION OF THE FIRST AID MEASURE

**Eye:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.

**Skin:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

**Inhalation:** If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

**Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

#### 4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

**Eye:** Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

**Inhalation:** Not normally a hazard. May cause respiratory tract irritation.

**Ingestion:** May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

#### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

**Note to Physicians:** Symptoms may not appear immediately.

**Specific Treatments:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

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### Section 5: FIRE-FIGHTING MEASURES

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#### 5.1 FLAMMABILITY

**Flammability:** Not flammable by WHMIS/OSHA/NOM-018-STPS-2000 criteria.

#### 5.2 EXTINGUISHING MEDIA

**Suitable Extinguishing Media:** Treat for surrounding material.

**Unsuitable Extinguishing Media:** None known.

#### 5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

**Products of Combustion:** May include, and are not limited to: oxides of carbon.

#### Explosion Data:

**Sensitivity to Mechanical Impact:** Not available.

**Sensitivity to Static Discharge:** Not available.

#### 5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

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### Section 6: ACCIDENTAL RELEASE MEASURES

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#### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

## 6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

**Methods for Containment:** Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

**Methods for Cleaning-Up:** Scoop up material and place in a disposal container.

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## Section 7: HANDLING AND STORAGE

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### 7.1 PRECAUTIONS FOR SAFE HANDLING

**Handling:** Avoid contact with skin and eyes. Avoid breathing vapor or mist. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. (See section 8)

**General Hygiene Advice:** Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

**Storage:** Keep out of the reach of children. Keep container tightly closed. (See section 10)

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## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 CONTROL PARAMETERS

#### Exposure Guidelines

Ingredient	Occupational Exposure Limits	
	OSHA-PEL	ACGIH-TLV
Nonylphenol ethoxylate	Not available.	Not available.
Diethylene glycol	Not available.	Not available.
Hexylene glycol	25 ppm	25 ppm
Ethylene oxide	1 ppm	1 ppm
1,4-Dioxane	100 ppm	20 ppm
2-Methoxyethanol	25 ppm	0.1 ppm

### 8.2 EXPOSURE CONTROLS

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

### 8.3 INDIVIDUAL PROTECTIVE MEASURES

#### Personal Protective Equipment:

**Eye/Face Protection:** Wear eye protection.

#### Skin Protection:

**Hand Protection:** Wear chemical resistant gloves.

**Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**General Health and Safety Measures:** Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

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**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear.
<b>Color:</b>	Green.
<b>Odor:</b>	Odorless.
<b>Odor Threshold:</b>	Not available.
<b>Physical State:</b>	Liquid.
<b>pH:</b>	Neutral.
<b>Melting Point/Freezing Point:</b>	Not available.
<b>Initial Boiling Point and Boiling Range:</b>	~ 100 °C (~ 212 °F)
<b>Flash Point:</b>	None.
<b>Evaporation Rate:</b>	Equal to water.
<b>Flammability:</b>	Not flammable.
<b>Lower Flammability/Explosive Limit:</b>	Not available.
<b>Upper Flammability/Explosive Limit:</b>	Not available.
<b>Vapor Pressure:</b>	< 25mm @ 21 °C (70 °F)
<b>Vapor Density:</b>	<1 (Air = 1)
<b>Relative Density/Specific Gravity:</b>	1.03
<b>Solubility:</b>	Completely soluble.
<b>Partition coefficient: n-octanol/water:</b>	Not available.
<b>Auto-ignition Temperature:</b>	Not available.
<b>Decomposition Temperature:</b>	Not available.
<b>Viscosity:</b>	Not available.
<b>Oxidizing Properties:</b>	Not available.
<b>Explosive Properties:</b>	Not available.
<b>Percent Volatile:</b>	65%

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**Section 10: STABILITY AND REACTIVITY**

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**10.1 REACTIVITY**

No dangerous reaction known under conditions of normal use.

**10.2 CHEMICAL STABILITY**

Stable under normal storage conditions.

**10.3 POSSIBILITY OF HAZARDOUS REACTIONS**

No dangerous reaction known under conditions of normal use.

**10.4 CONDITIONS TO AVOID**

Heat. Incompatible materials.

**10.5 INCOMPATIBLE MATERIALS**

Strong acids. Strong bases. Strong oxidizers.

**10.6 HAZARDOUS DECOMPOSITION PRODUCTS**

May include, and are not limited to: oxides of carbon.

**Section 11: TOXICOLOGICAL INFORMATION**
**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS**

**Likely Routes of Exposure:** Skin contact, eye contact and ingestion.

**Symptoms related to physical/chemical/toxicological characteristics:**

**Eye:** Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

**Skin:** Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin.

**Ingestion:** May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Inhalation:** Not normally a hazard. May cause respiratory tract irritation.

**Acute Toxicity:**

Ingredient	IDLH	LC50	LD50
Nonylphenol ethoxylate	Not available.	Not available.	Oral 1310 mg/kg, rat Dermal 2 mL/kg, rabbit
Diethylene glycol	Not available.	Not available.	Oral 12565 mg/kg, rat Dermal 11890 mg/kg, rabbit
Hexylene glycol	Not available.	Not available.	Oral 3692 mg/kg, rat Dermal 8560 µL/kg, rabbit
Ethylene oxide	Ca [800 ppm]	Inhalation 800 ppm 4 h, rat	Oral 72 mg/kg, rat
1,4-Dioxane	Ca [500 ppm]	Inhalation 48.5 mg/L 4h, rat	Oral 4200 mg/kg, rat Dermal 7600 mg/kg, rabbit
2-Methoxyethanol	200 ppm	Not available.	Oral 2370 mg/kg, rat Dermal 2000 mg/kg, rat Dermal 1280 mg/kg, rabbit

**Calculated overall Chemical Acute Toxicity Values**

LC50 (inhalation)	LD50 (oral)	LD50 (dermal)
Not available.	> 2000 mg/kg, rat	> 2000 mg/kg, rabbit

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
Nonylphenol ethoxylate	Not listed.
Diethylene glycol	Not listed.
Hexylene glycol	Not listed.
Ethylene oxide	O, G-A2, I-1, N-1, CP65
1,4-Dioxane	G-A3, I-2B, N-2, CP65
2-Methoxyethanol	CP65

\* See Section 15 for more information.

### 11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

<b>Skin Corrosion/Irritation:</b>	Causes skin irritation.
<b>Serious Eye Damage/Irritation:</b>	Causes serious eye irritation.
<b>Respiratory Sensitization:</b>	Based on available data, the classification criteria are not met.
<b>Skin Sensitization:</b>	Based on available data, the classification criteria are not met.
<b>STOT-Single Exposure:</b>	Based on available data, the classification criteria are not met.
<b>Chronic Health Effects:</b>	
<b>Carcinogenicity:</b>	Based on available data, the classification criteria are not met.
<b>Germ Cell Mutagenicity:</b>	Based on available data, the classification criteria are not met.
<b>Reproductive Toxicity:</b>	
<b>Developmental:</b>	Based on available data, the classification criteria are not met.
<b>Teratogenicity:</b>	Based on available data, the classification criteria are not met.
<b>Embryotoxicity:</b>	Based on available data, the classification criteria are not met.
<b>Fertility:</b>	Based on available data, the classification criteria are not met.
<b>STOT-Repeated Exposure:</b>	Based on available data, the classification criteria are not met.
<b>Aspiration Hazard:</b>	Based on available data, the classification criteria are not met.
<b>Toxicologically Synergistic Materials:</b>	Not available.
<b>Other Information:</b>	Not available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1 ECOTOXICITY

**Acute/Chronic Toxicity:** May cause long-term adverse effects in the aquatic environment.

### 12.2 PERSISTENCE AND DEGRADABILITY

Not available.

### 12.3 BIOACCUMULATIVE POTENTIAL

**Bioaccumulation:** Not available.

### 12.4 MOBILITY IN SOIL

Not available.

### 12.5 OTHER ADVERSE EFFECTS

Not available.

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS

**Disposal Method:** This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

**Other disposal recommendations:** Not available.

**Section 14: TRANSPORT INFORMATION**

DOT, IATA, IMDG (non-bulk)	Not Regulated <119 gallons
DOT, IATA, IMDG (Bulk)	UN 3082, Environmentally Hazardous Substance, Liquid, n.o.s. (Nonylphenol Ethoxylate) marine pollutant, 9, III

**Section 15: REGULATORY INFORMATION**
**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL**

**Canada:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

**US:** SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

**Mexico:** SDS prepared pursuant to NOM-018-STPS-2000.

**SARA Title III**

Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
Nonylphenol ethoxylate	Not listed.	Not listed.	Not listed.	Not listed.
Diethylene glycol	Not listed.	Not listed.	Not listed.	Not listed.
Hexylene glycol	Not listed.	Not listed.	Not listed.	Not listed.
Ethylene oxide	1,000	10	10	313



1,4-Dioxane	Not listed.	Not listed.	100	313
2-Methoxyethanol	Not listed.	Not listed.	Not listed.	313

### State Regulations

#### California Proposition 65:

This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

#### Global Inventories:

Ingredient	Canada DSL/NDSL	USA TSCA
Nonylphenol ethoxylate	DSL	Yes.
Diethylene glycol	DSL	Yes.
Hexylene glycol	DSL	Yes.
Ethylene oxide	DSL	Yes.
1,4-Dioxane	DSL	Yes.
2-Methoxyethanol	DSL	Yes.

#### NFPA-National Fire Protection Association:

<b>Health:</b>	1
<b>Fire:</b>	0
<b>Reactivity:</b>	0

#### HMIS-Hazardous Materials Identification System:

<b>Health:</b>	1
<b>Fire:</b>	0
<b>Physical Hazard:</b>	0

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

#### SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

**CP65** California Proposition 65

**OSHA (O)** Occupational Safety and Health Administration.

**ACGIH (G)** American Conference of Governmental Industrial Hygienists.

- A1 - Confirmed human carcinogen.
- A2 - Suspected human carcinogen.
- A3 - Animal carcinogen.
- A4 - Not classifiable as a human carcinogen.
- A5 - Not suspected as a human carcinogen.

**IARC (I)** International Agency for Research on Cancer.

- 1 - The agent (mixture) is carcinogenic to humans.
- 2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
- 2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
- 3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
- 4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

**NTP (N)** National Toxicology Program.

- 1 - Known to be carcinogens.
- 2 - Reasonably anticipated to be carcinogens.

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**Section 16: OTHER INFORMATION**

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**Version:** 1.1

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**End of Safety Data Sheet**