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**Section 1: IDENTIFICATION**

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**1.1 PRODUCT IDENTIFIER**

**Product Name:** ZL-27A  
**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:** December 16, 2013      **Version #:** 1.1

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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**

Aspiration hazard 1

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

**Signal Word:** Danger  
**Hazard Statement:** May be fatal if swallowed and enters airways.  
**Prevention:** Not applicable.  
**Response:** If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting.  
**Storage:** Store locked up.  
**Disposal:** Dispose of contents and container in accordance with all local, regional, national and international regulations.

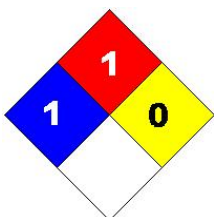
**2.3 ADDITIONAL INFORMATION**

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

26 % of the mixture consists of ingredient(s) of unknown acute toxicity.

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:** CAUTION

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 MIXTURES

Ingredient	UN #	H / F / R / *	CAS No	Wt. %
White mineral oil, petroleum	Not available	Not available	8042-47-5	15 - 40
Distillates (petroleum), hydrotreated light	UN1268	Not available	64742-47-8	15 - 40
Isodecyl Diphenyl phosphate	Not available	Not available	29761-21-5	15 - 40
Castor oil	Not available	0/1/0	8001-79-4	10 - 30
Triphenyl phosphate	Not available	2/1/0	115-86-6	1 - 5
7-(Diethylamino)-4-methyl-2-benzopyrone	Not available	Not available	91-44-1	1 - 5

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, including under lids. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

- Skin:** In case of contact, immediately flush skin with plenty of water. Do not use ointments. Call a physician if irritation develops and persists.
- Inhalation:** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

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

- Eye:** May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
- Inhalation:** May cause respiratory tract irritation. May cause drowsiness or dizziness.
- Ingestion:** May be fatal if swallowed and enters airways. May cause stomach distress, nausea or vomiting. This product may be aspirated into the lungs and cause chemical pneumonitis.

#### 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:** Foam, carbon dioxide.
- Unsuitable Extinguishing Media:** Water.

#### 5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

- Products of Combustion:** May include, and are not limited to: oxides of carbon, oxides of nitrogen.
- 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). Use water spray to keep fire-exposed containers cool. Avoid water in straight hose stream; will scatter and spread fire.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 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. Eliminate sources of ignition.

### 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. Provide ventilation.

## Section 7: HANDLING AND STORAGE

### 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. Use only outdoors or in a well-ventilated area. 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. Store in a well-ventilated place. Store locked up. (See section 10)

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS

#### Exposure Guidelines

Occupational Exposure Limits		
Ingredient	OSHA-PEL	ACGIH-TLV
White mineral oil, petroleum	Not available.	Not available.
Distillates (petroleum), hydrotreated light	100 ppm	200 mg/m <sup>3</sup>
Isodecyl Diphenyl phosphate	Not available.	Not available.
Castor oil	Not available.	Not available.
Triphenyl phosphate	3 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
7-(Diethylamino)-4-methyl-2-benzopyrone	Not available.	Not available.

### 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:** Safety glasses or goggles are recommended when using product.

**Skin Protection:****Hand Protection:** 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. Handle according to established industrial hygiene and safety practices.**Section 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Oily.
<b>Color:</b>	Green.
<b>Odor:</b>	Mild oily odor.
<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>	~ 235 °C (~ 455 °F)
<b>Flash Point:</b>	~ 93 °C (~ 200 °F)
<b>Evaporation Rate:</b>	Negligible.
<b>Flammability:</b>	Not flammable.
<b>Lower Flammability/Explosive Limit:</b>	1%
<b>Upper Flammability/Explosive Limit:</b>	6%
<b>Vapor Pressure:</b>	< 0.10 mm @ 21°C (70 °F)
<b>Vapor Density:</b>	>1 (Air= 1)
<b>Relative Density/Specific Gravity:</b>	0.96
<b>Solubility:</b>	Insoluble
<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>	9.17-11.21 cSt
<b>Oxidizing Properties:</b>	Not available.
<b>Explosive Properties:</b>	Not available.

**Section 10: STABILITY AND REACTIVITY**

**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**

None known.

**10.6 HAZARDOUS DECOMPOSITION PRODUCTS**

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

**Section 11: TOXICOLOGICAL INFORMATION**

**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS**

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

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

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

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

**Ingestion:** May be fatal if swallowed and enters airways. May cause stomach distress, nausea or vomiting. This product may be aspirated into the lungs and cause chemical pneumonitis.

**Inhalation:** May cause respiratory tract irritation. May cause drowsiness or dizziness.

**Acute Toxicity:**

Ingredient	IDLH	LC50	LD50
White mineral oil, petroleum	Not available.	Not available.	Oral >5000 mg/kg, rat Dermal >2000 mg/kg, rabbit
Distillates (petroleum), hydrotreated light	Not available.	Not available.	Oral >5000 mg/kg, rat Dermal >2000 mg/kg, rabbit
Isodecyl Diphenyl phosphate	Not available.	Not available.	Not available.
Castor oil	Not available.	Not available.	Not available.
Triphenyl phosphate	1000 mg/m <sup>3</sup>	Not available.	Oral 3500 mg/kg, rat Dermal >7900 mg/kg, rabbit

7-(Diethylamino)-4-methyl-2-benzopyrone	Not available.	Not available.	Oral 5 g/kg, rat
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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)*
White mineral oil, petroleum	Not listed.
Distillates (petroleum), hydrotreated light	Not listed.
Phosphoric acid, isodecyl diphenyl ester	Not listed.
Castor oil	Not listed.
Triphenyl phosphate	A-4
7-(Diethylamino)-4-methyl-2-benzopyrone	Not listed.

\* See Section 15 for more information.

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

- Skin Corrosion/Irritation:** May cause skin irritation.
- Serious Eye Damage/Irritation:** May cause eye irritation.
- Respiratory Sensitization:** Based on available data, the classification criteria are not met.
- Skin Sensitization:** Based on available data, the classification criteria are not met.
- STOT-Single Exposure:** Based on available data, the classification criteria are not met.
- Chronic Health Effects:**
- Carcinogenicity:** Based on available data, the classification criteria are not met.
  - Germ Cell Mutagenicity:** Based on available data, the classification criteria are not met.
- Reproductive Toxicity:**
- Developmental:** Based on available data, the classification criteria are not met.
  - Teratogenicity:** Based on available data, the classification criteria are not met.
  - Embryotoxicity:** Based on available data, the classification criteria are not met.
  - Fertility:** Based on available data, the classification criteria are not met.
- STOT-Repeated Exposure:** Based on available data, the classification criteria are not met.
- Aspiration Hazard:** May be fatal if swallowed and enters airways.
- Toxicologically Synergistic Materials:** Not available.
- Other Information:** 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

Floats on water.

### 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. (Isodecyl Diphenyl phosphate, Triphenyl phosphate) 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 MSDS contains all the information required by the Controlled Products Regulations.

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

**Mexico:** MSDS 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
White mineral oil, petroleum	Not listed.	Not listed.	Not listed.	Not listed.
Distillates (petroleum), hydrotreated light	Not listed.	Not listed.	Not listed.	Not listed.
Isodecyl Diphenyl phosphate	Not listed.	Not listed.	Not listed.	Not listed.



Castor oil	Not listed.	Not listed.	Not listed.	Not listed.
Triphenyl phosphate	Not listed.	Not listed.	Not listed.	Not listed.
7-(Diethylamino)-4-methyl-2-benzopyrone	Not listed.	Not listed.	Not listed.	Not listed.

#### State Regulations

##### California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

##### Global Inventories:

Ingredient	Canada DSL/NDSL	USA TSCA
White mineral oil, petroleum	DSL	Yes.
Distillates (petroleum), hydrotreated light	DSL	Yes.
Isodecyl Diphenyl phosphate	DSL	Yes.
Castor oil	DSL	Yes.
Triphenyl phosphate	DSL	Yes.
7-(Diethylamino)-4-methyl-2-benzopyrone	DSL	Yes.

#### NFPA-National Fire Protection Association:

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

#### HMIS-Hazardous Materials Identification System:

<b>Health:</b>	1
<b>Fire:</b>	1
<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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**Date of Preparation:** December 16, 2013  
**Expiry Date:** December 16, 2016  
**Version:** 1.1  
**Revision Date:** June 9, 2015

**Conforms to OSHA HazCom 2012, CPR & NOM-018-STPS-2000 Standards**

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**Prepared for:** Magnaflux

**End of Safety Data Sheet**