

**Section 1: IDENTIFICATION****1.1 PRODUCT IDENTIFIER**

**Product Name:** ZAF-2  
**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 Ave.  
Glenview, Illinois  
60025

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

**1.4 EMERGENCY TELEPHONE NUMBER**

**Emergency Telephone Number:** CHEMTREC 800-424-9300  
**Date of Preparation:** June 18, 2014 **Version #:** 1.0

**Section 2: HAZARD(S) IDENTIFICATION****2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012****Hazard class**

Acute toxicity 4 (Oral)  
Eye irritation 2A  
Specific target organ toxicity - Repeated exposure 1

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

**Signal Word:** Danger

**Hazard Statement:** Harmful if swallowed. Causes serious eye irritation. Causes damage to organs through prolonged or repeated exposure.

**Prevention:** Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray.

**Response:** Get medical advice/attention if you feel unwell. If swallowed: Immediately call a poison center/doctor. Rinse mouth. 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:** Dispose of contents and container in accordance with all local, regional, national and international regulations.

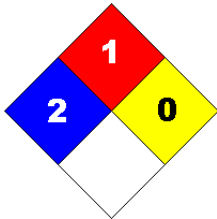
## 2.3 ADDITIONAL INFORMATION

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

50 % 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 D1B - Toxic Material
- Class D2A - Teratogenicity and Embryotoxicity
- Class D2B - 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. %
Ethylene glycol	Not available.	1/1/0	107-21-1	30 - 60
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl	Not available.	Not available.	126-86-3	30 - 60

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

<b>Eye:</b>	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.
<b>Skin:</b>	If irritation occurs, flush skin with plenty of water. Call a physician if irritation persists.
<b>Inhalation:</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention if you feel unwell.
<b>Ingestion:</b>	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

<b>Eye:</b>	Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
<b>Skin:</b>	May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.
<b>Inhalation:</b>	May cause respiratory irritation. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.
<b>Ingestion:</b>	Harmful if swallowed. May cause stomach distress, nausea or vomiting. Overexposure to the components has been suggested as a cause of kidney and liver damage in humans, and birth defects in animal studies at high doses.

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

<b>Note to Physicians:</b>	Symptoms may not appear immediately.
<b>Specific Treatments:</b>	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible). Ethylene glycol has resulted in kidney and brain damage to humans. If no medical personnel are available and the patient is conscious, ingestion of alcoholic beverage may prevent kidney failure.

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### Section 5: FIRE-FIGHTING MEASURES

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#### 5.1 FLAMMABILITY

<b>Flammability:</b>	Not flammable by WHMIS/OSHA/NOM-018-STPS-2000 criteria.
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#### 5.2 EXTINGUISHING MEDIA

<b>Suitable Extinguishing Media:</b>	Powder, foam, carbon dioxide, sand.
<b>Unsuitable Extinguishing Media:</b>	Not available.

#### 5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

<b>Products of Combustion:</b>	May include, and are not limited to: oxides of carbon, aldehydes,
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hydrocarbons.

**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 firefighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

**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.

**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. Do not swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Handle and open container with care. Handle in well-ventilated areas. 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 dry, cool and well-ventilated area. (See section 10)

**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 CONTROL PARAMETERS**

**Exposure Guidelines**

Occupational Exposure Limits		
Ingredient	OSHA-PEL	ACGIH-TLV
Ethylene glycol	50 ppm	50 ppm
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl	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:** Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

**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. Wash contaminated clothing before reusing.

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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>	Not available.
<b>Color:</b>	Light yellow.
<b>Odor:</b>	Menthol.
<b>Odor Threshold:</b>	Not available.
<b>Physical State:</b>	Liquid.
<b>pH:</b>	Not available.
<b>Melting Point/Freezing Point:</b>	Not available.
<b>Initial Boiling Point and Boiling Range:</b>	> 199 °C (> 390 °F).
<b>Flash Point:</b>	> 110 °C (> 230 °F).
<b>Evaporation Rate:</b>	Not available.
<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>	< 0.98 mmHg @ 21 °C (70 °F).
<b>Vapor Density:</b>	Not available.
<b>Relative Density/Specific Gravity:</b>	Not available.
<b>Solubility:</b>	Not available.
<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.

**Oxidizing Properties:** Not available.

**Explosive Properties:** Not available.

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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

Bases. Dehydrating agents. Materials reactive with hydroxyl compounds. Reactive metals. Oxidizers.

#### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

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

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### Section 11: TOXICOLOGICAL INFORMATION

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#### 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:** Causes serious 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:** Harmful if swallowed. May cause stomach distress, nausea or vomiting. Overexposure to the components has been suggested as a cause of kidney and liver damage in humans, and birth defects in animal studies at high doses.

**Inhalation:** May cause respiratory irritation. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

**Acute Toxicity:**

Ingredient	IDLH	LC50	LD50
Ethylene glycol	Not available.	Not available.	Oral 4000 mg/kg, rat Dermal 9530 µL/kg, rabbit
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl	Not available.	Not available.	Not available.

**Calculated overall Chemical Acute Toxicity Values**

LC50 (inhalation)	LD50 (oral)	LD50 (dermal)
Not available.	>300 but ≤2000 mg/kg, rat (Calculated using ATE values)	> 2000 mg/kg, rabbit
Ingredient		Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
Ethylene glycol		G-A4
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl		Not listed.

\* See Section 15 for more information.

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

<b>Skin Corrosion/Irritation:</b>	Based on available data, the classification criteria are not met.
<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>	Hazardous by WHMIS criteria.
<b>Embryotoxicity:</b>	Hazardous by WHMIS criteria.
<b>Fertility:</b>	Based on available data, the classification criteria are not met.
<b>STOT-Repeated Exposure:</b>	Causes damage to organs through prolonged or repeated exposure.
<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.

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### Section 13: DISPOSAL CONSIDERATIONS

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#### 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.

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### Section 14: TRANSPORT INFORMATION

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#### 14.1 UN NUMBER

DOT	TDG	NOM-004-SCT2-1994
Not regulated.	Not regulated.	Not regulated.

#### 14.2 UN PROPER SHIPPING NAME

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

#### 14.3 TRANSPORT HAZARD CLASS (ES)

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

#### 14.4 PACKING GROUP

DOT	TDG	NOM-004-SCT2-1994
Not applicable.	Not applicable.	Not applicable.

#### 14.5 ENVIRONMENTAL HAZARDS

Not available.

#### 14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

#### 14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

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### Section 15: REGULATORY INFORMATION

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#### 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
Ethylene glycol	Not listed.	Not listed.	5,000	313
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl	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
Ethylene glycol	DSL	Yes.
5-Decyne-4,7-diol, 2,4,7,9-tetramethyl	DSL	Yes.

#### NFPA-National Fire Protection Association:

<b>Health:</b>	2
<b>Fire:</b>	1
<b>Reactivity:</b>	0

#### HMIS-Hazardous Materials Identification System:

<b>Health:</b>	2*
<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:**      June 18, 2014  
**Expiry Date:**              June 18, 2017  
**Version:**                      1.0  
**Revision Date:**              June 18, 2014

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

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**End of Safety Data Sheet**