

MATERIAL SAFETY DATA SHEET

ZYGLO® DEVELOPER ZP-9F

1. IDENTIFICATION

Company: MAGNAFLUX
Address: 3624 West Lake Avenue, Glenview, Illinois 60025
Telephone No.: CHEMTREC 800-424-9300
Product Use: Penetrant inspection developer
Packages: 5 gallon pail, aerosols
NFPA Rating: Health 1 (aerosol 2), Flammability 3 (aerosol 4), Reactivity 0 (aerosol 1)
PIN (Canada)(Bulk): UN 1993
Revision Date: April 16, 2010

2. HAZARDOUS INGREDIENTS

<i>Ingredient</i>	<i>Wt./Wt. %</i>	<i>CAS #</i>	<i>TLV</i>	<i>PEL</i>	<i>LD₅₀</i>	<i>LC₅₀</i>
2-propanone	40-70	67-64-1	750 ppm	750 ppm	6 g/kg (oral/rat)	not avail.
2-propanol	10-30	67-63-0	400 ppm	400 ppm	3.6 g/kg (oral/mouse)	not avail.
2,2'-Bis(Hydroxymethyl)-1,3-propanediol	10-30	115-77-5	10 mg/m ;	5 mg/m ;	23.5 g/kg (oral/mouse)	not avail.
**Carbon dioxide (Propellant)	7	124-38-9	5000 ppm	5000 ppm	not avail.	not avail.

**AEROSOL PACKAGE ONLY

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
 Extremely flammable white liquid and aerosol. Fast evaporating vapors can reach hazardous levels quickly in unventilated spaces.

POTENTIAL HEALTH EFFECTS

Skin Contact: Can irritate by removing natural skin oils on long or repeated exposures.
Eyes: Irritating, but does not damage eye tissue.
Inhalation: Causes dizziness and nausea.
Ingestion: Not significant in small (mouthful) amounts.
Medical conditions known to be aggravated by exposure to product: None

4. FIRST AID

Skin Contact: Wash off with soap and water. Use soothing lotion.
Eyes: Rinse carefully under upper and lower eyelids using plenty of water.
Inhalation: Remove to fresh air if dizzy or nauseated.
Ingestion: Do not induce vomiting. Accidental ingestion of a single mouthful is not expected to cause significant harm.

NOTE: In all severe cases, contact physician immediately. Local telephone operators can furnish number of regional poison control center.

5. FIRE HAZARD

Conditions of flammability: Bulk and aerosol: Ignition will occur if used near flames, arcs or other ignition sources.
Flash point: 2°F (-16°C) (Pensky-Martens closed cup).
Flammable limits in air: 2% to 15%.
Extinguishing media: Carbon dioxide, foam, water.
Special fire fighting procedures: Keep containers cool with water spray.
Hazardous combustion products: Soot, oxides of carbon.
Unusual fire hazards: Aerosol cans may burst over 130°F (54°C) and add to existing fire.

6. ACCIDENTAL RELEASE MEASURES

Turn off or remove sources of ignition. Mop up or sweep up with absorbent. (For disposal, see Section 13.)

7. HANDLING AND STORAGE

Avoid breathing vapors.
 Avoid eye contact.
 Avoid repeated or prolonged skin contact.
 Store away from heat sources.
 Do not spray around arcs or flame.

Storage Level 2 Aerosols per NFPA 30B

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Controls: Use where ventilation will carry vapors away from unoccupied areas.
Personal protection: Wear safety glasses to protect eyes. Wear nitrile rubber gloves if hand exposure is unavoidable.
 Respirator with filter if sprayed in enclosed, unventilated space.

9. PHYSICAL PROPERTIES

Initial boiling point (bulk): 135E F (57EC) (ASTM D-86) **Vapor pressure:** Bulk:
 380mm @ 100EF (38EC).
Percent volatile: 85%
Aerosol: 105 psi @ 75EF (24EC)
Density/sp. gravity: 0.86 **Vapor density:** 3
Water solubility: 100 **Evaporation rate:** 0.4 of ether
pH: Neutral **Appearance:** White liquid
Odor: Alcohol odor

10. STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: None
Hazardous decomposition products: When burning, soot, oxides of carbon
Reactivity: None

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: Contains no known or suspected carcinogens listed with OSHA, IARC, NTP, or ACGIH.
Threshold limit value (Bulk): 400 ppm
WHMIS information (Canada): According to available information, the ingredients have not been found to show reproductive toxicity, teratogenicity, mutagenicity, skin sensitization, or synergistic toxic effects with other materials.

12. ECOLOGICAL INFORMATION

No data is available on ZP-9F. 2,2'-Bis(hydroxypropyl)-1,3-propanediol dissolves in water and is biodegradable.

13. DISPOSAL

Send to a licensed waste facility for proper disposal.

RCRA: Hazardous waste.
U.S. EPA Waste Number: D001

14. TRANSPORTATION

U.S. DOT: 49 CFR 172.101 Hazardous Materials Table

Proper shipping name:	<u>Bulk</u> FLAMMABLE LIQUID, N.O.S. (Isopropanol, Acetone)	<u>Aerosol</u> Consumer commodity
Hazard class or division:	3	ORM-D
Identification No.:	UN1993	None
Packing Group:	II	None

IATA: List of Dangerous Goods

Proper Shipping Name:	<u>5 Gal or less (> 5 gal cannot go air)</u> FLAMMABLE LIQUID, N.O.S. (Isopropanol, Acetone)	<u>Aerosol</u> Aerosols, flammable
Hazard class or division:	3	2.1
Identification No:	UN1993	UN1950
Packing Group:	II	-

IMDG: General Index

Proper shipping name:	<u>Bulk</u> FLAMMABLE LIQUID, N.O.S. (Isopropyl Alcohol, Acetone)	<u>Aerosol</u> AEROSOLS
Hazard class or division:	3.2	2.1
Identification No:	UN1993	UN1950
Packing Group:	II	-

15. REGULATORY INFORMATION

TSCA: All ingredients are listed in TSCA inventory.
CERCLA: Reportable quantity (RQ) for Acetone = 5000 lbs.
SARA TITLE III, Section 313: Acetone.
California Proposition 65: Contains nothing on this list
WHMIS Class (Canada): Bulk: B-2, D-2B - Aerosol: A, B-5, D-2B

Note: This MSDS has been prepared to meet WHMIS (Canada) requirements with the exception of using 16 headings.

16. **OTHER INFORMATION**

Revision Statement: Section 7
Supersedes: May 27, 2008
Prepared by: Tamie Simmons, Research Manager

MATERIAL SAFETY DATA SHEET

ZYGLO® DRY POWDER DEVELOPER ZP-4B

1. IDENTIFICATION

Company: MAGNAFLUX
Address: 3624 West Lake Avenue, Glenview, Illinois 60026
Telephone No.: 847-657-5300 (Off-Hour Emergency Number - CHEMTREC - 1-800-424-9300).
Product Use: Developer for fluorescent penetrants.
Packages: 1 pint can, 10 and 25 lb. boxes.
NFPA Rating: Health 1, Flammability 1, Reactivity 0.
PIN (Canada): None
Revision Date: September 16, 2010

2. INGREDIENTS

<u>Ingredient</u>	<u>Wt./Wt. %</u>	<u>CAS #</u>	<u>TLV</u>	<u>PEL</u>	<u>LD₅₀</u> 10 g/kg (oral/rat)	<u>LC₅₀</u>
Pentaerythritol	40-70	115-77-5	10 mg/m ³	5 mg/m ³	not avail.	not avail.
Hexamethyldisilazane, silica reaction product	3-7	68909-20-6	10 mg/m ³	6 mg/m ³	5mg/kg	not avail.
Aluminum oxide	3-7	1344-28-1	10 mg/m ³	5 mg/m ³	not avail.	not avail.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Nuisance dust.

POTENTIAL HEALTH EFFECTS

Skin Contact: None
Eyes: Gritty material may scratch eyeball
Inhalation: May plug breathing passages
Ingestion: Not significant
Medical conditions known to be aggravated by exposure to product: None

4. FIRST AID

Skin Contact: None
Eyes: Rinse carefully under upper and lower eyelids using plenty of water.
Inhalation: Remove to fresh air.
Ingestion: None.

NOTE: In all severe cases, contact physician immediately. Local telephone operators can furnish number of regional poison control center.

5. FIRE HAZARD

Conditions of flammability: None
Flash point: None
Flammable limits in air: None
Extinguishing media: None
Special fire fighting procedures: None
Hazardous combustion products: None
Unusual fire hazards: Floating ZP-4B dust can be ignited by high energy arc (350 joules or watt-seconds) or temperatures higher than 383°F (195°C).

6. ACCIDENTAL RELEASE MEASURES

Sweep up. (For disposal, see Section 13).

7. HANDLING AND STORAGE

Avoid breathing dust.
 Keep dry.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Controls: None.
Personal protection: Respirator with filter if used in enclosed, unventilated space.

9. PHYSICAL PROPERTIES

<i>Initial boiling point (bulk):</i>	None	<i>Vapor pressure:</i>	None
<i>Percent volatile:</i>	None	<i>Vapor density:</i>	Not applicable
<i>Density/sp. gravity:</i>	0.2	<i>Evaporation rate:</i>	None
<i>Water solubility:</i>	4%	<i>Appearance:</i>	Fluffy white dusty powder
<i>pH:</i>	Neutral	<i>Odor:</i>	None

10. STABILITY AND REACTIVITY

<i>Stability:</i>	Stable
<i>Incompatibility:</i>	Acids
<i>Hazardous decomposition products:</i>	If heated to combustion temperature, soot, smoke, and oxides of carbon.
<i>Reactivity:</i>	None

11. TOXICOLOGICAL INFORMATION

<i>Carcinogenicity:</i>	Contains no known or suspected carcinogens listed with OSHA, IARC, NTP, or ACGIH.
<i>Threshold limit value:</i>	5 mg/m ³ for respirable dust.
<i>WHMIS information (Canada):</i>	According to available information, the ingredients have not been found to show reproductive toxicity, teratogenicity, mutagenicity, skin sensitization, or synergistic toxic effects with other materials.

12. ECOLOGICAL INFORMATION

No data is available on ZP-4B.

13. DISPOSAL

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

14. TRANSPORTATION

U.S. DOT: 49 CFR 172.101 Hazardous Materials Table

<i>Proper shipping name:</i>	None, not restricted
<i>Hazard class or division:</i>	None
<i>Identification No.:</i>	None
<i>Packing Group:</i>	None

15. REGULATORY INFORMATION

<i>TSCA:</i>	All ingredients are listed in TSCA inventory.
<i>CERCLA:</i>	Not reportable
<i>SARA TITLE III, Section 313:</i>	Aluminum oxide
<i>California Proposition 65:</i>	Contains nothing on this list
<i>WHMIS Class (Canada):</i>	Not a controlled product.
Note: This MSDS has been prepared to meet WHMIS (Canada) requirements with the exception of using 16 headings.	

16. OTHER INFORMATION

<i>Revision Statement:</i>	Section 2, Section 13
<i>Supersedes:</i>	September 6, 2007



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MSDS

Common Name: SPOTCHECK CLEANER/REMOVER SKC-S

Manufacturer: MAGNAFLUX

MSDS Revision Date: 4/13/2007

Grainger Item Number(s): 3WU61, 3WU62, 3WU63, 3WU64, 3WU65, 6KX47, 6KX50, 9GRK4

**Manufacturer Model
Number(s):**

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MAGNAFLUX (R*)
A DIVISION OF ILLINOIS TOOL WORKS INC.

MATERIAL SAFETY DATA SHEET

SPOTCHECK (R*) CLEANER/REMOVER SKC-S

1. IDENTIFICATION



COMPANY: MAGNAFLUX

ADDRESS:
3624 WEST LAKE AVENUE
GLENVIEW, ILLINOIS 60026

TELEPHONE NO.:
847-657-5300 (OFF-HOUR EMERGENCY NUMBER - CHEMTREC - 1-800-424-9300).

PRODUCT USE: WIPE ON SOLVENT CLEANER/REMOVER FOR PENETRANT INSPECTION

PACKAGES: 1 GALLON CAN, 5 GALLON PAIL, 55 GALLON DRUMS, AEROSOLS

NFPA RATING:
HEALTH 1
FLAMMABILITY 3
REACTIVITY 0

PIN (CANADA):
BULK: UN1268

REVISION DATE: APRIL 13, 2007

2. HAZARDOUS INGREDIENTS



INGREDIENT	WT./WT. %	CAS #	TLV	PEL
LIGHT ALIPHATIC SOLVENT NAPHTHA	60-100	64742-89-8	300 PPM (8 HR.TWA)	NOT AVAIL.
CARBON DIOXIDE PROPELLANT (AEROSOL ONLY)	3-7	124-38-9	NOT AVAIL.	5000 PPM
INGREDIENT	LD50	LC50		
LIGHT ALIPHATIC SOLVENT NAPHTHA	5 G/KG (ORAL/RAT)	3400 PPM (4 HRS/RAT)		
CARBON DIOXIDE PROPELLANT (AEROSOL ONLY)	NOT AVAIL.	NOT AVAIL.		

3. HAZARDS IDENTIFICATION



EMERGENCY OVERVIEW:
FLAMMABLE LIQUID AND AEROSOL. VAPOR MAY CAUSE FLASH FIRE. HARMFUL OR FATAL IF SWALLOWED. MIST OR VAPOR MAY IRRITATE THE RESPIRATORY TRACT. LIQUID CONTACT MAY CAUSE EYE AND SKIN IRRITATION. OVER-EXPOSURE MAY CAUSE CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION AND TARGET ORGAN EFFECTS. SPILLS MAY CREATE A SLIPPING HAZARD.

POTENTIAL HEALTH EFFECTS & SIGNS AND SYMPTOMS OF EXPOSURE:

SKIN CONTACT:

IRRITATING TO SKIN. REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.

EYES: VAPORS MAY BE IRRITATING TO THE EYE.

INHALATION:

VAPORS EXPECTED TO BE SLIGHTLY IRRITATING. VAPORS MAY CAUSE DROWSINESS AND DIZZINESS.

INGESTION:

HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED BY EXPOSURE TO PRODUCT:

PRE-EXISTING MEDICAL CONDITIONS OF THE FOLLOWING ORGAN(S) OR ORGAN SYSTEM(S) MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL:

EYES, SKIN, RESPIRATORY SYSTEM.

4. FIRST AID



SKIN CONTACT: WASH OFF WITH SOAP AND WATER. USE SOOTHING LOTION.

EYES:

RINSE CAREFULLY UNDER UPPER AND LOWER EYELIDS USING PLENTY OF WATER. REST EYES FOR 30 MINUTES. IF REDNESS, BURNING, BLURRED VISION, OR SWELLING PERSIST, TRANSPORT TO THE NEAREST MEDICAL FACILITY FOR ADDITIONAL TREATMENT.

INHALATION:

REMOVE TO FRESH AIR IF DIZZY OR NAUSEATED. IF RAPID RECOVERY DOES NOT OCCUR, TRANSPORT TO NEAREST MEDICAL FACILITY FOR ADDITIONAL TREATMENT.

INGESTION:

DO NOT INDUCE VOMITING. TRANSPORT TO NEAREST MEDICAL FACILITY FOR ADDITIONAL TREATMENT. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION.

NOTE:

IN ALL SEVERE CASES, CONTACT PHYSICIAN IMMEDIATELY. LOCAL TELEPHONE OPERATORS CAN FURNISH NUMBER OF REGIONAL POISON CONTROL CENTER.

5. FIRE HAZARD



CONDITIONS OF FLAMMABILITY:

BULK AND AEROSOL: READILY IGNITED IN PRESENCE OF IGNITION SOURCES.

FLASH POINT: MIN. 57 DEG. F (14 DEG. C) (PENSKEY-MARTENS) CLOSED CUP.

FLAMMABLE LIMITS IN AIR: 1% TO 6%.

EXTINGUISHING MEDIA: CARBON DIOXIDE, FOAM

SPECIAL FIRE FIGHTING PROCEDURES:

KEEP CONTAINERS COOL WITH WATER SPRAY. DO NOT SPRAY WATER DIRECTLY ON

BURNING SKC-S. IT WILL FLOAT AND SPREAD THE FIRE.

HAZARDOUS COMBUSTION PRODUCTS: SMOKE, SOOT, OXIDES OF CARBON.

UNUSUAL FIRE HAZARDS:

AEROSOL CANS MAY BURST IF HEATED ABOVE 130 DEG. F (54 DEG. C) AND SPRAY CONTENTS INTO A FIRE.

6. ACCIDENTAL RELEASE MEASURES



MOP UP OR SWEEP UP WITH ABSORBENT. AVOID CONTACT WITH SPILLED OR RELEASED MATERIAL. IMMEDIATELY REMOVE ALL CONTAMINATED CLOTHING. (FOR DISPOSAL, SEE SECTION 13.)

7. HANDLING AND STORAGE



AVOID EYE CONTACT. AVOID REPEATED OR PROLONGED SKIN CONTACT. AVOID BREATHING SPRAY MIST. DO NOT SPRAY NEAR ARCS OR FLAMES. USE ONLY IN WELL VENTILATED AREAS. WASH THOROUGHLY AFTER HANDLING.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION



CONTROLS:

USE WHERE VENTILATION WILL CARRY SPRAY MIST AWAY FROM OCCUPIED AREAS.

PERSONAL PROTECTION:

WEAR SAFETY GLASSES TO PROTECT EYES. WEAR NITRILE RUBBER GLOVES IF HAND EXPOSURE IS UNAVOIDABLE. RESPIRATOR WITH SOLVENT VAPOR ABSORBING CARTRIDGE IF USED IN ENCLOSED, UNVENTILATED SPACE.

9. PHYSICAL PROPERTIES



INITIAL BOILING POINT (BULK): MIN. 245 DEG. F (118 DEG. C) (ASTM D-86)

VAPOR PRESSURE: 12 AND 16 OZ.

AEROSOL: 105 PSI @ 75 DEG. F (24 DEG. C)

BULK: 1.5-2.0 KPA AT 20 DEG. C/68.0 DEG. F

VOC CONTENT (EPA METHOD 24): 750 G/L

VAPOR DENSITY: 4.1

DENSITY/SP. GRAVITY: 0.76

EVAPORATION RATE: FAST

WATER SOLUBILITY: 0

APPEARANCE: CLEAR, COLORLESS LIQUID

pH: NEUTRAL

ODOR: NAPHTHA ODOR

10. STABILITY AND REACTIVITY



STABILITY: STABLE UNDER NORMAL CONDITIONS OF USE

INCOMPATIBILITY:

AVOID HEAT, SPARKS, OPEN FLAMES AND OTHER IGNITION SOURCES. AVOID STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

A COMPLEX MIXTURE OF AIRBORNE SOLIDS, LIQUIDS, AND GASES, INCLUDING CARBON MONOXIDE, CARBON DIOXIDE AND OTHER ORGANIC COMPOUNDS WILL BE EVOLVED WHEN THIS MATERIAL UNDERGOES COMBUSTION OR THERMAL OR OXIDATIVE DEGRADATION.

REACTIVITY: NONE

11. TOXICOLOGICAL INFORMATION



CARCINOGENICITY:

CONTAINS NO KNOWN OR SUSPECTED CARCINOGENS LISTED WITH OSHA, IARC, NTP, OR ACGIH.

THRESHOLD LIMIT VALUE: 300 PPM

WHMIS INFORMATION (CANADA):

ACCORDING TO AVAILABLE INFORMATION, THE INGREDIENTS HAVE NOT BEEN FOUND TO SHOW REPRODUCTIVE TOXICITY, TERATOGENICITY, MUTAGENICITY, SKIN SENSITIZATION, OR SYNERGISTIC TOXIC EFFECTS WITH OTHER MATERIALS.

12. ECOLOGICAL INFORMATION



NO DATA IS AVAILABLE ON SKC-S. IT FLOATS ON WATER AND EVAPORATES AWAY. IT IS 100% VOC.

13. DISPOSAL



AS HAZARDOUS WASTE, SEND TO LICENSED WASTE HANDLER WHO CAN BLEND IT INTO SECONDARY FUELS.

RCRA: HAZARDOUS WASTE.

U.S. EPA WASTE NUMBER: D001

14. TRANSPORTATION



U.S. DOT: 49 CFR 172.101 HAZARDOUS MATERIALS TABLE

	NON-AEROSOL	AEROSOL
PROPER SHIPPING NAME:	PETROLEUM DISTILLATES, N.O.S.	CONSUMER COMMODITY
HAZARD CLASS OR DIVISION:	3	ORM-D
IDENTIFICATION NO.:	UN1268	NONE
PACKING GROUP:	II	NONE
IATA: LIST OF DANGEROUS GOODS	NON-AEROSOL	AEROSOL
PROPER SHIPPING NAME:	PETROLEUM DISTILLATES, N.O.S.	AEROSOLS, FLAMMABLE
HAZARD CLASS OR DIVISION:	3	2.1
IDENTIFICATION NO.:	UN1268	UN1950
PACKING GROUP:	II	
IMDG: GENERAL INDEX	NON-AEROSOL	AEROSOL
PROPER SHIPPING NAME:	PETROLEUM DISTILLATES, N.O.S.	AEROSOLS
HAZARD CLASS OF DIVISION:	3.2	2.1
IDENTIFICATION NO.:	UN1268	UN1950
PACKING GROUP:	II	

15. REGULATORY INFORMATION



TSCA: ALL INGREDIENTS ARE LISTED IN TSCA INVENTORY.

CANADIAN DSL: ALL INGREDIENTS ARE LISTED IN THE CANADIAN DSL

CERCLA: VM&P NAPHTHA (64742-89-8) REPORTABLE QUANTITY 66,667 LBS.

SARA TITLE III, SECTION 313:
XYLENE, MIXED ISOMER (1330-20-7) <0.13%

META-XYLENE (108-38-3) <0.05%
ETHYLBENZENE (100-41-4) <0.03%
BENZENE (71-43-2) <0.005%
TOLUENE (108-88-3) <0.01%

CALIFORNIA PROPOSITION 65:

WARNING:

THIS MATERIAL MAY CONTAIN TRACE AMOUNTS OF CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR BIRTH DEFECTS AND/OR REPRODUCTIVE HARM.

WHMIS CLASS (CANADA):

NON-AEROSOL: B-2, D-2B

AEROSOL: A, B-5, D-2B

NOTE:

THIS MSDS HAS BEEN PREPARED TO MEET WHMIS (CANADA) REQUIREMENTS WITH THE EXCEPTION OF USING 16 HEADINGS.

16. OTHER INFORMATION



REVISION STATEMENT: SECTION 9

SUPERSEDES: OCTOBER 26, 2004

PREPARED BY: TAMIE SIMMONS, RESEARCH MANAGER

MATERIAL SAFETY DATA SHEET

ZYGLO® PENETRANT ZL-27A

1. IDENTIFICATION

Company: MAGNAFLUX
Address: 3624 West Lake Avenue, Glenview, Illinois 60026
Telephone No.: 847-657-5300 (Off-Hour Emergency Number - CHEMTREC - 1-800-424-9300).
Product Use: Fluorescent inspection penetrant
Packages: 1 gallon cans, 5 gallon pails, 20 gallon and 55 gallon drums, aerosols.
NFPA Rating: Health 1, Flammability 1, (Aerosol Flammability 4), Reactivity 0
PIN: None
Revision Date: April 16, 2010

2. HAZARDOUS INGREDIENTS

<u>Ingredient</u>	<u>Wt./Wt. %</u>	<u>CAS #</u>	<u>TLV</u>	<u>PEL</u>	<u>LD₅₀</u>	<u>LC₅₀</u>
White mineral oil (petroleum)	30-60	8042-47-5	not avail.	not avail.	not avail.	not avail.
Isodecyl diphenyl phosphate					15.8 g/kg	2.2 mg/l
	30-60	29761-21-5	not avail.	not avail.	(oral/rat)	[6 hr/(rat(2/6))]
Castor oil	10-30	8001-79-4	not avail.	not avail.	not avail.	not avail.
Triphenyl phosphate	1-2	115-86-6	3 mg/m ³	not avail.	not avail.	not avail.
Isobutane (propellant)	30	75-28-5	not avail.	1000 ppm	not avail.	not avail.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Bland, oily liquid which may irritate the skin and eyes. Difficult to ignite, but will burn vigorously, if engulfed in fire. Aerosol is extremely flammable.

POTENTIAL HEALTH EFFECTS

Skin Contact: Can irritate by removing natural skin oils on long or repeated exposures.
Eyes: May cause irritation.
Inhalation: Not significant at room temperatures. When heated or sprayed, ZL-27A vapors may cause dizziness and nausea.
Ingestion: Not significant in small (mouthful) amounts.
Medical conditions known to be aggravated by exposure to product: None

4. FIRST AID

Skin Contact: Wash off with soap and water. Use soothing lotion.
Eyes: Rinse carefully under upper and lower eyelids using plenty of water.
Inhalation: Remove to fresh air if dizzy or nauseated.
Ingestion: Do not induce vomiting. Accidental ingestion of a small mouthful is not expected to cause significant harm.
NOTE: In all severe cases, contact physician immediately. Local telephone operators can furnish number of regional poison control center.

5. FIRE HAZARD

Conditions of flammability: Bulk: Heating above 200°F (93°C) in presence of ignition sources. Aerosol: Spraying near flames or arcs will ignite the spray mist.
Flash point: Min. 200° F (93° C) (Pensky-Martens closed cup)
Flammable limits in air: 1% to 6%
Extinguishing media: Carbon dioxide, foam
Special fire fighting procedures: Keep containers cool with water spray. Do not spray water directly on burning ZL-27A. It may float and spread the fire.
Hazardous combustion products: Smoke, soot, oxides of carbon and nitrogen.
Unusual fire hazards: Aerosol cans may burst at temperatures over 130°F (54°C) and spray contents into a fire.

6. ACCIDENTAL RELEASE MEASURES

Mop up or sweep up with absorbent. (For disposal, see Section 13.)

7. HANDLING AND STORAGE

Avoid breathing spray mist. Avoid eye contact. Avoid repeated or prolonged skin contact. Store away from heat source. Storage Level 3 Aerosols per NFPA 30B

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Controls: None, unless applied as spray. Use where ventilation will carry spray mist away from occupied areas.
Personal protection: Wear safety glasses to protect eyes. Wear nitrile rubber gloves if hand exposure is unavoidable. Respirator with filter if sprayed in enclosed, unventilated space.

9. PHYSICAL PROPERTIES

Initial boiling point (bulk): Min. 455°F(235°C) (ASTM D-86) **Vapor pressure:** Bulk: < 0.10 mm @ 70° F (21° C)
VOC Content (EPA Method 24): 539 g/L **Aerosol:** 60 psi @ 75°F(24°C)
Density/sp. gravity: 0.96 **Vapor density:** Heavier than air
Water solubility: 0% **Evaporation rate:** Negligible
pH: Neutral **Appearance:** Green oily liquid
Odor: Mild odor

10. **STABILITY AND REACTIVITY**

Stability: Stable
Incompatibility: None
Hazardous decomposition products: Soot, oxides of carbon if heated to combustion temperatures.
Reactivity: None

11. **TOXICOLOGICAL INFORMATION**

Carcinogenicity: Contains no known or suspected carcinogens listed with OSHA, IARC, NTP, or ACGIH.
Threshold limit value: 5 mg/m³ for oily mist
WHMIS information (Canada): According to available information, the ingredients have not been found to show reproductive toxicity, teratogenicity, mutagenicity, skin sensitization, or synergistic toxic effects with other materials.

12. **ECOLOGICAL INFORMATION**

Because it contains 10% or more of a marine pollutant (Isodecyl Diphenyl phosphate) and 1% or more of a severe marine pollutant (Triphenyl Phosphate), ZL-27A is itself considered a marine pollutant. It floats on water and can be skimmed off. Its low bulk vapor pressure may exempt it from VOC restrictions.
The hydrocarbon propellant is not an ozone depleter.

13. **DISPOSAL**

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

14. **TRANSPORTATION**

U.S. DOT: 49 CFR 172.101 Hazardous Materials Table

	Non-Bulk and Non-Vessel	Bulk or Vessel	Aerosols
<i>Proper shipping name:</i>	None, not restricted	Environmentally hazardous substance Liquid, n.o.s. (isodecyl diphenyl phosphate, triphenyl phosphate)	Consumer commodity
<i>Technical Name of Hazardous Component(s):</i>	None	Isodecyl Diphenyl phosphate, Triphenyl Phosphate	None
<i>Hazard class or division:</i>	None	9	ORM-D
<i>Identification No.:</i>	None	UN 3082	None
<i>Packing Group:</i>	None	III	None
<i>Other Information:</i>	None	This product contains 10% or more of a DOT Marine Pollutant (Isodecyl Diphenyl phosphate) and 1% or more of a DOT Severe Marine Pollutant (Triphenyl Phosphate).	None
IATA: List of Dangerous Goods			
<i>Proper shipping name:</i>	None, not restricted	Environmentally hazardous substance Liquid, n.o.s. (isodecyl diphenyl phosphate, triphenyl phosphate)	Aerosol, Flammable, UN 1950, 2.1
<i>Hazard class or division:</i>	None	9	2.1
<i>Identification No.:</i>	None	UN 3082	UN 1950
<i>Packing Group:</i>	None	III	None
<i>Other Information:</i>	None	This product contains 10% or more of a DOT Marine Pollutant (Isodecyl Diphenyl phosphate) and 1% or more of a DOT Severe Marine Pollutant (Triphenyl Phosphate).	None
IMDG: General Index			
<i>Proper shipping name:</i>	None, not restricted	Environmentally hazardous substance Liquid, n.o.s. (isodecyl diphenyl phosphate, triphenyl phosphate)	Aerosols, 2.1, UN 1950
<i>Hazard class or division:</i>	None	9	2.1
<i>Identification No.:</i>	None	UN 3082	UN 1950
<i>Packing Group:</i>	None	III	None
<i>Other Information:</i>	None	This product contains 10% or more of a DOT Marine Pollutant (Isodecyl Diphenyl phosphate) and 1% or more of a DOT Severe Marine Pollutant (Triphenyl Phosphate).	Each case must be labeled as a marine pollutant.

15. **REGULATORY INFORMATION**

TSCA: All ingredients are listed in TSCA inventory.
CERCLA: Not reportable
SARA TITLE III, Section 313: No reportable ingredients
California Proposition 65: Contains nothing on this list
WHMIS Class (Canada): Bulk: D-2B, Aerosol: A, B-5, D-2B
Note: This MSDS has been prepared to meet WHMIS (Canada) requirements with the exception of using 16 headings.

16. **OTHER INFORMATION**

Revision Statement: Section 7
Supersedes: March 29, 2010
Prepared by: Tamie Simmons, Research Manager