

MSDS# ZL

SERICOL, INC.
 20 WEST 14TH AVENUE
 NORTH KANSAS CITY, MISSOURI 64116
 (816) 474-0650

HMIS RATINGS
 HEALTH-----2
 FLAMMABILITY-----2
 REACTIVITY-----0

 * MATERIAL SAFETY DATA SHEET *

For screen printing inks as required under 29 CFR 1910.1200(g).

UNDER OSHA'S HAZARD COMMUNICATION STANDARD, WHERE COMPLEX MIXTURES HAVE SIMILAR HAZARDS AND CONTENTS, THE MANUFACTURER MAY PREPARE ONE MATERIAL SAFETY DATA SHEET TO APPLY TO ALL OF THESE SIMILAR MIXTURES. THIS DOCUMENT APPLIES TO ALL COLORS AND SPECIALS IN THIS INK LINE.

EMERGENCY PHONE NUMBER PREPARER: CRAIG POGGENPOHL DATE OF PREPARATION
 (816) 587-8178 REGULATORY COMPLIANCE MGR. REVISED 08/27/03/CP

REVISIONS: SECTION II.

SECTION I--PRODUCT IDENTIFICATION

PRODUCT NAME : ZL
 LABEL IDENTITY: ZEPHYR-LON SERIES
 PRODUCT CLASS : SOLVENT EVAPORATIVE SCREEN INK

SECTION II--HAZARDOUS INGREDIENTS

COMMON NAME (CAS REGISTRY #)	PERCENT BY WEIGHT	RECOMMENDED EXPOSURE LIMITS (PPM) ¹			VAPOR PRESSURE (mm Hg @ 20 C) ¹
		ACGIH	TLV-TWA	OSHA PEL	
PROPYLENE GLYCOL METHYL ETHER AC (108-65-6) !	30-55 !	50 ⁴ !		NE !	3.7
GLYCOL ETHER ACETATE EB ! (112-07-2) !	5-15 !	20 !		5 ^{2,5} !	0.3
CYCLOHEXANONE ! (108-94-1) !	10-20 !	20 ² !		50 !	3.4
LEAD CHROMATE ³ (7758-97-6) as Cr !		0.012mg/m ³ !			NA
	as Pb !	0.05mg/m ³ !			
NA - NOT APPLICABLE	NE - NOT ESTABLISHED			UKN - UNKNOWN	

¹ UNLESS NOTED OTHERWISE, THE UNITS ARE PPM AND mm Hg @ 20 C, RESPECTIVELY, FOR EXPOSURE LIMITS AND VAPOR PRESSURES.

² SKIN ABSORPTION MAY CONTRIBUTE TO THE OVERALL ABSORPTION OF THIS MATERIAL. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ABSORPTION SO THAT THE TLV AND/OR PEL ARE NOT INVALIDATED.

³ INKS CONTAINING LEAD CHROMATE (SOME SPECIALS MAY NOT BE LISTED):
 K57271 300 FIRE RED K77344 102 MEDIUM YELLOW K84950 301 BRIGHT RED
 K84953 400 EMERALD GREEN K88280 SP RED K89656 SP ZL RC FIRE RED 476-I
 K93932 SP ZL CHROME YELLOW TONER.

⁴ MAK - FEDERAL REPUBLIC OF GERMANY MAXIMUM CONCENTRATION VALUES IN THE WORKPLACE.

⁵ NIOSH RELS - U.S. NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH RECOMMENDED EXPOSURE LIMITS.

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SECTION III -- PHYSICAL AND CHEMICAL CHARACTERISTICS
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BOILING RANGE: 302-367 DEG F.
DENSITY: 8.4 TO 14.1 LB./GAL.
VOC CONTENT OF MATERIAL: 35-70 % BY WEIGHT OR 570-790 GRAMS PER LITER.
VOC CONTENT OF COATING LESS WATER AND LESS EXEMPT SOLVENTS: 570-790 G/L.
VAPOR DENSITY: HEAVIER THAN AIR.
EVAPORATION RATE: SLOWER THAN DIETHYL ETHER.
APPEARANCE AND ODOR: VISCOUS LIQUID, VARIOUS COLORS, ETHER-LIKE ODOR.

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SECTION IV -- PHYSICAL HAZARD DATA
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FLAMMABILITY CLASSIFICATIONS: OSHA: CLASS II DOT: COMBUSTIBLE LIQUID
CLOSED CUP FLASH POINT: 111 F. EXPLOSIVE LIMITS: LOWER: 0.9% UPPER: 13.1%

EXTINGUISHING MEDIA: "CLASS B" FIRE EXTINGUISHERS USED IN ACCORDANCE
WITH MANUFACTURERS INSTRUCTIONS.

"ALCOHOL" FOAM CO2 DRY CHEMICAL WATER FOG

UNUSUAL FIRE OR EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.
ISOLATE FROM HEAT, SPARKS, ELECTRICAL EQUIPMENT AND OPEN FLAMES.
CLOSED CONTAINERS MAY RUPTURE OR EXPLODE WHEN EXPOSED TO EXTREME HEAT.
APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS.
DURING EMERGENCY CONDITIONS, OVEREXPOSURE TO DECOMPOSITION PRODUCTS MAY
CONSTITUTE A HEALTH HAZARD. SYMPTOMS MAY NOT BE IMMEDIATELY APPARENT.
OBTAIN MEDICAL ATTENTION.

SPECIAL FIREFIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT IS
RECOMMENDED TO PROTECT FIRE FIGHTERS FROM ANY HAZARDOUS DECOMPOSITION
PRODUCTS.
WATER MAY BE UNSUITABLE FOR USE ON BURNING LIQUIDS. IF WATER MUST BE
USED, FOG NOZZLES ARE HIGHLY PREFERABLE. WATER MAY BE USED TO COOL
CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO-
IGNITION, EXPLOSION, OR RUPTURE WHEN EXPOSED TO EXTREME HEAT.

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SECTION V -- EMERGENCY AND FIRST-AID PROCEDURES
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PRIMARY ROUTES OF ENTRY ARE DERMAL AND INHALATION.

FOR SWALLOWING: DRINK TWO GLASSES OF WATER TO DILUTE. DO NOT INDUCE
VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CONSULT
PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY. BE
PREPARED TO PROVIDE THE ATTENDING PHYSICIAN WITH A COPY OF THIS DOCUMENT.

FOR SKIN CONTACT: REMOVE CONTAMINATED CLOTHING. WASH THOROUGHLY WITH
MILD SOAP AND WARM WATER. CONSULT A PHYSICIAN IF THERE IS ANY
PERSISTING IRRITATION.

FOR INHALATION: REMOVE VICTIM TO A WELL VENTILATED AREA. GIVE OXYGEN
OR ARTIFICIAL RESPIRATION AS REQUIRED. TREAT SYMPTOMATICALLY AND
CONSULT PHYSICIAN.

FOR EYE CONTACT: FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST
FIFTEEN MINUTES. CONSULT PHYSICIAN FOR MEDICAL TREATMENT, IF NECESSARY.

SPECIAL NOTES TO ATTENDING PHYSICIAN: THERE IS NO SPECIFIC ANTIDOTE.
TREATMENT OF OVEREXPOSURE SHOULD BE DIRECTED AT CONTROL OF THE SYMPTOMS
AND THE CLINICAL CONDITION.

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SECTION VI -- SIGNS AND SYMPTOMS OF OVEREXPOSURE

ACUTE EFFECTS:

SWALLOWING: MAY CAUSE HEADACHE, NAUSEA, VOMITING, DIZZINESS, IRRITATION OF THE DIGESTIVE TRACT. SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE).

SKIN ABSORPTION: PROLONGED OR WIDESPREAD CONTACT WITH SKIN MAY LEAD TO ABSORPTION OF HARMFUL AMOUNTS OF MATERIAL WITH ACCOMPANYING SIGNS AND SYMPTOMS OF TOXICITY AS DESCRIBED FOR SWALLOWING.

INHALATION: VAPORS ARE IRRITATING TO EYES, NOSE AND RESPIRATORY TRACT. OVEREXPOSURE MAY RESULT IN HEADACHE, NAUSEA, VOMITING, SIGNS OF NERVOUS SYSTEM DEPRESSION. VAPORS HAVE AN OBJECTIONABLE ODOR.

SKIN CONTACT: MAY CAUSE SLIGHT IRRITATION WITH PROLONGED CONTACT. PROLONGED AND REPEATED OVEREXPOSURE MAY RESULT IN REDNESS, BURNING, DRYING AND CRACKING.

EYE CONTACT: CAUSES IRRITATION, BURNING, TEARING, REDNESS AND SWELLING.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED BY OVEREXPOSURE: LUNG CONDITIONS, SENSITIZATIONS, OR ALLERGIES.

CHRONIC EFFECTS: REPEATED OVEREXPOSURE MAY CAUSE RED BLOOD CELL HEMOLYSIS, LIVER AND KIDNEY DAMAGE.

INKS CONTAINING LEAD CHROMATE:
LEAD CHROMATE IS SUSPECTED TO CAUSE LUNG CANCER AND IS LISTED BY THE NATIONAL TOXICOLOGY PROGRAM (NTP) AND THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC).

CARCINOGENICITY - LEAD CHROMATE: NTP? YES IARC? YES OSHA? NO

HEALTH EFFECTS OF OVEREXPOSURE TO LEAD:
PROLONGED OR REPEATED INHALATION AND INGESTION, SUCH AS FROM POOR HYGIENE, HOUSEKEEPING OR HANDLING PRACTICES, CAN RESULT IN LEAD POISONING.

ACUTE EFFECTS: MAY CAUSE ACUTE ENCEPHALOPATHY WHICH DEVELOPS QUICKLY TO SEIZURES, COMA, AND DEATH FROM CARDIORESPIRATORY ARREST.

CHRONIC EFFECTS: CAN CAUSE LOSS OF APPETITE, METALLIC TASTE IN THE MOUTH, ANXIETY, CONSTIPATION, NAUSEA, PALLOR, EXCESSIVE TIREDNESS, WEAKNESS, INSOMNIA, HEADACHE, NERVOUS IRRITABILITY, MUSCLE AND JOINT PAIN OR SORENESS, FINE TREMORS, NUMBNESS, DIZZINESS, HYPERACTIVITY AND COLIC. LEAD COLIC MAY CAUSE SEVERE ABDOMINAL PAIN. OVEREXPOSURE CAN ALSO CAUSE DAMAGE TO THE CENTRAL NERVOUS SYSTEM AND THE BRAIN (ENCEPHALOPATHY), KIDNEY DISEASE, REPRODUCTIVE TOXICITY IN BOTH MEN AND WOMEN, BLOOD-FORMING SYSTEM DISORDERS AND ULTIMATELY ANEMIA.
REFERENCE 29 CFR 1910.1025 FOR MORE INFORMATION ON LEAD EXPOSURE.

ADDITIONAL KNOWN HEALTH HAZARDS:
REPORTS HAVE ASSOCIATED PROLONGED AND REPEATED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

SECTION VII -- REACTIVITY DATA

THIS MIXTURE IS STABLE AND HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ACIDS, STRONG BASES, STRONG OXIDIZING AGENTS.

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HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, MIXED OXIDES OF NITROGEN, ACRID SMOKE.

CONDITIONS TO AVOID: EXTREME TEMPERATURES, SPARKS, OPEN FLAMES OR ANY OTHER IGNITION SOURCES.

SECTION VIII -- SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED: USING NON-SPARKING TOOLS, PLACE LEAKING CONTAINERS IN A WELL VENTILATED AREA. AVOID BREATHING VAPORS. ELIMINATE ALL SOURCES OF HEAT, SPARKS, OR IGNITION. NOTIFY PROPER AUTHORITIES IF PUBLIC WATERS OR SEWERS ARE CONTAMINATED.

WASTE DISPOSAL METHOD: AS A HAZARDOUS WASTE, THIS MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL ORDINANCES. INQUIRE OF YOUR LOCAL ENVIRONMENTAL AGENCIES FOR THE EXACT LEGAL REQUIREMENTS IN YOUR AREA. REFER TO SECTIONS IV, V, VI, VII AND IX OF THIS DOCUMENT BEFORE ATTEMPTING ANY CLEANUP.

SECTION IX -- SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: WHERE CONCENTRATIONS IN AIR MAY EXCEED THE LIMITS GIVEN IN SECTION II AND ENGINEERING, WORK PRACTICE OR OTHER MEANS OF EXPOSURE REDUCTION ARE NOT ADEQUATE, NIOSH/MSHA APPROVED RESPIRATORS MAY BE NECESSARY TO PREVENT OVEREXPOSURE. VENTILATION REQUIREMENTS: LOCAL EXHAUST RECOMMENDED WHEN APPROPRIATE TO CONTROL EXPOSURE TO MIST OR AEROSOLS. GENERAL EXHAUST IS NORMALLY ADEQUATE TO MINIMIZE EXPOSURE TO VAPORS.

PROTECTIVE GLOVES: RUBBER OR NEOPRENE TO MINIMIZE SKIN CONTACT. EYE PROTECTION: SAFETY GOGGLES OR FULL FACE SHIELD. HYGIENIC SAFETY PRACTICES: WASH HANDS BEFORE EATING, USING TOBACCO PRODUCTS, OR USING THE WASHROOM. TOBACCO AND FOOD SHOULD BE CONSUMED IN DESIGNATED AREAS ONLY. ADDITIONAL SAFETY EQUIPMENT: IMPERMEABLE APRONS AND BOOTS. SAFETY SHOWER AND EYE BATH SHOULD BE MADE AVAILABLE.

SPECIAL HANDLING INSTRUCTIONS FOR INKS CONTAINING LEAD CHROMATE:

OCCUPATIONAL EXPOSURE TO LEAD CHROMATE IN OUR PRODUCTS IS UNLIKELY. HOWEVER, SANDING, BLASTING, OR ABRADING OF THE DRIED COATING CAN GENERATE HARMFUL DUST OR PARTICLES IF INHALED. IT IS RECOMMENDED THAT YOU WEAR A PROPERLY FITTED RESPIRATOR (NIOSH/MSHA APPROVED) WHILE PERFORMING ANY OF THE ABOVE FUNCTIONS.

REFERENCE 29 CFR 1910.1025 FOR MORE INFORMATION ON LEAD EXPOSURE.

SECTION X -- SPECIAL PROCEDURES

TRANSPORTATION, STORAGE, AND HANDLING: AVOID CONDITIONS LISTED IN SECTION VII. AVOID PROLONGED STORAGE AT TEMPERATURES IN EXCESS OF 100 F.

OTHER PRECAUTIONS: PROTECT AGAINST THE INHALATION OF DUST OR PARTICLES GENERATED BY SANDING, BLASTING, OR ABRADING OF THE DRIED COATING.

SECTION XI -- DISCLAIMER

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SERICOL, INC. MAKES NO WARRANTY, EXPRESSED OR IMPLIED, AS TO THE ACCURACY OR RELIABILITY OF INFORMATION CONTAINED HEREIN, EXCEPT THAT SUCH INFORMATION IS, TO THE BEST OF SERICOL'S KNOWLEDGE AND BELIEF, ACCURATE AS OF THE DATE INDICATED ON THIS DOCUMENT. FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL IS THE SOLE RESPONSIBILITY OF THE USER. ALL MATERIALS MAY PRESENT UNKNOWN HEALTH HAZARDS AND SHOULD BE USED WITH CAUTION. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED HEREIN, WE CANNOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

SECTION XII -- CUSTOMER'S OBLIGATIONS

SERICOL INC. URGES THE CUSTOMER RECEIVING THIS MATERIAL SAFETY DATA SHEET TO STUDY IT CAREFULLY TO BECOME AWARE OF HAZARDS, IF ANY, OF THE PRODUCTS INVOLVED. IN THE INTEREST OF SAFETY, YOU SHOULD, (1) NOTIFY YOUR EMPLOYEES, AGENTS, AND CONTRACTORS OF THE INFORMATION ON THIS SHEET, (2) FURNISH A COPY TO EACH OF YOUR CUSTOMERS FOR THIS PRODUCT, AND (3) REQUEST YOUR CUSTOMERS TO INFORM THEIR EMPLOYEES, CUSTOMERS, AND AGENTS, AS WELL.

SECTION XIII -- REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS: THE INGREDIENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.

THIS PRODUCT CONTAINS A TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE ANNUAL REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

CONTAINS: GLYCOL ETHER ACETATE EB
CAS# 112-07-2
15 % MAXIMUM BY WEIGHT

INKS CONTAINING LEAD CHROMATE:

LEAD COMPOUNDS: 25 % MAXIMUM BY WEIGHT.
(LEAD CONTENT: 16 % MAXIMUM BY WEIGHT)

CHROMIUM COMPOUNDS 25 % MAXIMUM BY WEIGHT.
(CHROMIUM CONTENT: 4 % MAXIMUM BY WEIGHT)

THIS NOTIFICATION MUST NOT BE DETACHED FROM THE MATERIAL SAFETY DATA SHEET (MSDS) AND ANY COPYING AND REDISTRIBUTION OF THE MSDS SHALL INCLUDE COPYING AND REDISTRIBUTION OF THE NOTICE ATTACHED TO COPIES OF THE MSDS SUBSEQUENTLY REDISTRIBUTED.

STATE OF CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65): FOR PRODUCTS CONTAINING LEAD CHROMATE PIGMENTS:

LEAD IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND REPRODUCTIVE TOXICITY.

CHROMIUM (HEXAVALENT COMPOUNDS) IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

ZEPHYR LON SCREEN INKS

VOLATILE ORGANIC COMPOUND CONTENT (VOC)

PRODUCT DESCRIPTION	! INK WPG ! (LB.)	! % VOC ! BY WT	! LB. VOC ! PER GAL	! GRAMS VOC ! PER LITRE!
SM55515/K55515 ZLON 1000 OP	8.42	70.8	5.96	715

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K55590	ZLON 800 WHITE	11.98	43.2	5.17	620
K55716	ZLON 700 BLACK	8.61	66.9	5.76	691
K70126	ZLON 801 WHITE	14.03	33.7	4.73	568
K78522	ZLON 39 VIOLET TONER	9.38	59.2	5.55	666
K78523	ZLON 50 GS BLUE TONER	9.23	60.8	5.61	673
K78525	ZLON 94 EXTENDER	9.10	64.1	5.83	700
K78946	ZLON 504 ULTRA BLUE	9.23	60.7	5.60	673
K80502	ZLON 70 BLACK TONER	8.57	67.9	5.82	697
K84953	ZLON 400 EMERALD	10.89	50.1	5.46	654
K84955	ZLON 501 LIGHT BLUE	9.54	56.1	5.35	642
K88280	ZLON RED	10.39	51.6	5.36	643
K91696	SP RC TRANS YS RED TN	8.51	69.1	5.88	706
K91697	SP RC TRANS RS YEL TN	8.59	68.2	5.86	703
K92195	ZLON 150 PRIMROSE	9.86	55.8	5.50	660
K92199	ZLON 350 FIRE RED	9.18	62.3	5.72	686
K92937	SP ZLON DVT ORANGE	9.74	56.3	5.48	658
K93303	SP ZL PMS 468U TAN	11.22	47.7	5.35	642
K94996	ZLON ORANGE	9.07	63.4	5.75	689
K95247	SP RC TRANS MAGENTA TN	8.50	70.7	6.01	721

Revised 01/08/04/cdp