

MSDS# PN

 * MATERIAL SAFETY DATA SHEET *

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

FUJIFILM SERICOL USA, INC.
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HMIS RATINGS
 HEALTH-----2
 FLAMMABILITY-----1
 REACTIVITY-----1

EMERGENCY PHONE NUMBER PREPARER: CRAIG POGGENPOHL DATE OF PREPARATION
 (816) 587-8178 REGULATORY COMPLIANCE MGR. REVISED 06/05/07/VP

REVISIONS: XIII.

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 SECTION I--PRODUCT IDENTIFICATION
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PRODUCT CODE : PN
 LABEL IDENTITY: POLYDYNE
 PRODUCT CLASS : ULTRAVIOLET CURABLE SCREEN INK

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 SECTION II--HAZARDOUS INGREDIENTS
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COMMON NAME (CAS REGISTRY #)	RECOMMENDED EXPOSURE LIMITS (PPM) ¹		VAPOR PRESSURE (mm Hg @ 20 C) ¹
	ACGIH TLV-TWA	OSHA PEL	
ACRYLATE ESTERS (TS)	NE	NE	< 1
GLYCOL ETHER ACRYLATE ³ (TS)	NE	NE	< 1
VINYL MONOMER (TS)	NE	NE	< 1
ACRYLATE EPOXY (TS)	NE	NE	< 1
PHOTOINITIATORS (TS)	5 ² mg/m ³	NE	< 1
TITANIUM DIOXIDE ⁴ (13463-67-7)	10 mg/m ³	15 mg/m ³ (TOTAL DUST)	

NA - NOT APPLICABLE NE - NOT ESTABLISHED UKN - UNKNOWN TS - TRADE SECRET

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

² RECOMMENDED BY MANUFACTURER.

³ SEE SECTION XIII FOR SARA 313 INFORMATION.

⁴ INKS CONTAINING TITANIUM DIOXIDE: PNS35261

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 SECTION III -- PHYSICAL AND CHEMICAL CHARACTERISTICS
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BOILING RANGE: > 150 C.
 DENSITY: 9.2-12.6 LB./GAL.
 VOLATILE ORGANIC COMPOUNDS: LESS THAN 2% BY WEIGHT.
 VAPOR DENSITY: HEAVIER THAN AIR.
 EVAPORATION RATE: SLOWER THAN DIETHYL ETHER.
 APPEARANCE AND ODOR: MOBILE LIQUID, VARIOUS COLORS, ACRYLATE ODOR.

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SECTION IV -- PHYSICAL HAZARD DATA

FLAMMABILITY CLASSIFICATIONS: OSHA: CLASS III B DOT: NOT REGULATED
CLOSED CUP FLASH POINT: >200 F. EXPLOSIVE LIMITS: UNKNOWN

EXTINGUISHING MEDIA: "CLASS B" FIRE EXTINGUISHERS USED PER
INSTRUCTIONS ("ALCOHOL" FOAM, CO2, DRY CHEMICAL, WATER FOG).

UNUSUAL FIRE AND EXPLOSION HAZARDS:
HIGH TEMPERATURES/INHIBITOR DEPLETION/ACCIDENTAL IMPURITIES/EXPOSURE
TO RADIATION/OXIDIZERS MAY CAUSE SPONTANEOUS POLYMERIZING REACTION,
GENERATING HEAT/PRESSURE. CLOSED CONTAINERS MAY RUPTURE/EXPLODE
DURING RUNAWAY POLYMERIZATION.

SPECIAL FIREFIGHTING PROCEDURES:
DO NOT ENTER FIRE AREA WITHOUT PROPER PROTECTION. SEE SECTION ON
DECOMPOSITION PRODUCTS POSSIBLE. FIGHT FIRE FROM SAFE
DISTANCE/PROTECTED LOCATION. HEAT/IMPURITIES MAY INCREASE
TEMPERATURE/BUILD PRESSURE/RUPTURE CLOSED CONTAINERS, SPREADING
FIRE, INCREASING RISK OF BURNS/INJURIES. WATER MAY BE INEFFECTIVE
IN FIREFIGHTING DUE TO LOW SOLUBILITY. USE WATER SPRAY/FOG FOR
COOLING. PRESSURE RELIEF SYSTEM MAY PLUG WITH SOLIDS, INCREASING
RISK OF OVERPRESSURE. NOTIFY AUTHORITIES IF LIQUID ENTERS
SEWER/PUBLIC WATERS.

SECTION V -- EMERGENCY AND FIRST-AID PROCEDURES

PRIMARY ROUTES OF ENTRY ARE DERMAL.

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.

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.

SECTION VI -- SIGNS AND SYMPTOMS OF OVEREXPOSURE

ACUTE EFFECTS:

SWALLOWING: ONE COMPONENT IS CONSIDERED MODERATELY TOXIC. MAY CAUSE
IRRITATION OF MOUTH AND THROAT, NAUSEA AND VOMITING.

SKIN ABSORPTION: MAY BE SLIGHTLY TOXIC IF ABSORBED THROUGH SKIN.

INHALATION: EXPOSURE TO VAPORS IS UNLIKELY DUE TO LOW VAPOR PRESSURE
OF INGREDIENTS, BUT INHALATION OF MIST, AEROSOLS, OR VAPORS MAY RESULT
IN IRRITATION OF THE RESPIRATORY TRACT, COUGHING, AND SHORTNESS OF BREATH.

SKIN CONTACT: CONTAINS MATERIALS THAT MAY CAUSE MODERATE SKIN INJURY

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(REDDENING AND SWELLING) AND/OR SENSITIZATION. PROLONGED CONTACT MAY CAUSE BLISTER FORMATION (BURNS). SINCE IRRITATION MAY NOT OCCUR IMMEDIATELY, CONTACT CAN GO UNNOTICED.

EYE CONTACT: MAY CAUSE MODERATE IRRITATION, BURNING SENSATION, SWELLING, TEARING, AND REDNESS.

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

CHRONIC EFFECTS: REPEATED INHALATION EXPOSURES UP TO 30 PPM OF ONE COMPONENT IN RATS HAS RESULTED IN LIVER DAMAGE AND EFFECTS ON NASAL MUCOSA, RESPIRATORY TRACT AND BLOOD. IN ADDITION, A SUBCHRONIC INHALATION STUDY REVEALED THIS COMPONENT CAUSED LIVER AND RESPIRATORY TRACT EFFECTS IN RATS.

ADDITIONAL KNOWN HEALTH HAZARDS: NONE KNOWN.

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SECTION VII -- REACTIVITY DATA
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THIS MIXTURE IS POTENTIALLY UNSTABLE AND HAZARDOUS POLYMERIZATION MAY OCCUR IF EXPOSED TO MATERIALS AND CONDITIONS TO BE AVOIDED.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ACIDS, OXIDIZERS, ALKALI METAL HYDROXIDES, POLYMERIZATION INITIATORS, PEROXIDES, INERT GASES.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, MIXED OXIDES OF NITROGEN, SULFUR AND METHACRYLATES MONOMERS.

CONDITIONS TO AVOID: EXTREME TEMPERATURES, DIRECT SUNLIGHT, X-RAY SOURCES, ELECTRON BEAM SOURCES, OR ULTRAVIOLET RADIATION SOURCES.

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SECTION VIII -- SPILL OR LEAK PROCEDURES
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PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED:
SPILLED/RELEASED MATERIAL MAY POLYMERIZE AND RELEASE HEAT/GASES. EXTINGUISH ALL IGNITION SOURCES. BLANKET WITH FIREFIGHTING FOAM. IMPOUND/RECOVER LARGE LAND SPILL; SOAK UP SMALL SPILL WITH INERT SOLIDS. ON WATER, CONTAIN/MINIMIZE DISPERSION/COLLECT. REPORT PER REGULATORY REQUIREMENTS.

WASTE DISPOSAL METHODS:
CONTAMINATED PRODUCT/SOIL/WATER MAY BE RCRA/OSHA HAZARDOUS WASTE DUE TO POTENTIAL FOR INTERNAL HEAT GENERATION (SEE 40 CFR 261 AND 29 CFR 1910). LANDFILL SOLIDS AT PERMITTED SITES. USE REGISTERED TRANSPORTERS. BURN CONCENTRATED LIQUIDS IN SYSTEMS THAT USE COMPATIBLE FUEL. DILUTE WITH CLEAN, LOW VISCOSITY FUEL. AVOID FLAMEOUTS. ASSURE EMISSIONS COMPLY WITH APPLICABLE REGULATIONS. DILUTE AQUEOUS WASTE MAY BIODEGRADE. AVOID OVERLOADING/POISONING PLANT BIOMASS. ASSURE EFFLUENT COMPLIES WITH APPLICABLE REGULATIONS.

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SECTION IX -- SAFE HANDLING AND USE INFORMATION
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RESPIRATORY PROTECTION: DUE TO LOW VAPOR PRESSURE, INHALATION IS NOT CONSIDERED AN OCCUPATIONALLY SIGNIFICANT ROUTE OF EXPOSURE, HOWEVER, A NIOSH-APPROVED RESPIRATOR IS RECOMMENDED FOR OPERATIONS RESULTING IN EXCESS ORGANIC VAPORS IN THE BREATHING ZONE.
VENTILATION REQUIREMENTS: LOCAL EXHAUST RECOMMENDED WHEN APPROPRIATE TO CONTROL EXPOSURE TO MIST OR AEROSOLS. GENERAL EXHAUST IS NORMALLY ADEQUATE TO MINIMIZE EXPOSURE TO VAPORS.

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PROTECTIVE GLOVES: RUBBER OR NEOPRENE TO MINIMIZE SKIN CONTACT.
EYE PROTECTION: SAFETY GOGGLES OR FULL FACE SHIELD WHENEVER A SPLASH HAZARD IS PRESENTED.
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.

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: LEATHER GLOVES, APRONS, BELTS, OR BOOTS MAY BE PERMEATED BY THESE MATERIALS, CAUSING DELAYED AND PERSISTENT IRRITATION OR CHEMICAL BURNS. LEATHER ITEMS SHOULD BE DISPOSED OF, ONCE CONTAMINATED.

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

SECTION XI -- DISCLAIMER

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 -- PURCHASERS' 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 COMPONENT WHOSE COMMERCIAL USE IS SUBJECT TO TOXIC SUBSTANCES CONTROL ACT (TSCA) SECTION 5, SIGNIFICANT NEW USE RULE (SNUR) CFR 721.3850.

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.

CERTAIN GLYCOL ETHERS: 20-30% 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

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SUBSEQUENTLY REDISTRIBUTED.

STATE OF CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65): THIS PRODUCT MAY CONTAIN RESIDUAL AMOUNTS OF TOLUENE AND FORMALDEHYDE, CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.