

MSDS# PF-TH

* 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-----0

EMERGENCY PHONE NUMBER PREPARER: CRAIG POGGENPOHL DATE OF PREPARATION
(816) 587-8178 REGULATORY COMPLIANCE MGR. REVISED 08/25/05/CP

REVISIONS: SECTION II.

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SECTION I--PRODUCT IDENTIFICATION
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PRODUCT CODE : PF-TH
LABEL IDENTITY: PHOTO FLEX THINNER
PRODUCT CLASS : ULTRAVIOLET CURABLE SCREEN INK REDUCER

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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	
N-VINYLPYRROLIDONE (88-12-0)	0.05	NE	.10 AT 24 DEG C.
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.

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SECTION III -- PHYSICAL AND CHEMICAL CHARACTERISTICS
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BOILING POINT: 96.0 DEG C.(204.8 F) AT 14 mm Hg.
FREEZING POINT: 13.5 C (56.3 F).
VAPOR DENSITY: 3.8 (AIR=1)
DENSITY IS 8.7 LB./GAL.
pH: 8.1-10.2
VOLATILE ORGANIC COMPOUNDS: NONE
SOLUBILITY IN WATER: COMPLETE.
EVAPORATION RATE: NOT VOLATILE.
APPEARANCE AND ODOR: CLEAR LIQUID.

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SECTION IV -- PHYSICAL HAZARD DATA
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FLAMMABILITY CLASSIFICATIONS: OSHA: CLASS III B.
DOT SHIPPING DESCRIPTION: TOXIC, LIQUIDS, ORGANIC, N.O.S.
(N-VINYLPYRROLIDONE), 6.1, UN2810, PG III.

CLOSED CUP FLASH POINT: 205 F. FLAMMABILITY LIMITS IN AIR (% BY VOLUME)
AUTOIGNITION TEMP: 687 DEG F LOWER: 1.4 UPPER: 10

EXTINGUISHING MEDIA: "CLASS B" FIRE EXTINGUISHERS USED IN ACCORDANCE

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WITH MANUFACTURERS INSTRUCTIONS.

"ALCOHOL" FOAM DRY CHEMICAL WATER FOG

UNUSUAL HAZARDS: CAN REACT VIGOROUSLY WITH OXIDIZING MATERIALS. TOXIC OXIDES OF NITROGEN GASES MAY BE EMITTED WHEN HEATED TO DECOMPOSITION.

FIREFIGHTING PROCEDURES: FIREFIGHTERS SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND TURN OUT GEAR.

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SECTION V -- EMERGENCY AND FIRST-AID PROCEDURES
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ROUTES OF ENTRY: INHALATION/ABSORPTION/CONTACT.

FOR SWALLOWING: DILUTE WITH WATER AND IMMEDIATELY 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.

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SECTION VI -- SIGNS AND SYMPTOMS OF OVEREXPOSURE
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ACUTE OVEREXPOSURE EFFECTS:

INGESTION: MAY CAUSE NAUSEA AND VOMITING, POSSIBLY LEADING TO CONVULSIONS.

INHALATION: IF MISTED, WILL CAUSE PALLOR, NAUSEA, LACK OF COORDINATION, STUPOR.

SKIN CONTACT: ABSORPTION WILL CAUSE NAUSEA AND VOMITING, POSSIBLY LEADING TO CONVULSIONS.

EYE CONTACT: WILL CAUSE PAINFUL BURNING OR STINGING OF EYES AND LIDS, WATERING OF EYES, AND INFLAMMATION OF CONJUNCTIVA.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED BY OVEREXPOSURE: NO DATA FOUND.

CHRONIC OVEREXPOSURE EFFECTS:

N-VINYLPYRROLIDONE TWO (2) YEAR INHALATION STUDY:
RATS EXHIBITED MINOR LIVER CHANGES AT AIRBORNE LEVELS OF 15 PPM AND IRRITATION OF THE NASAL MUCOSA AT 5 PPM. THE RESULTS OF A TWO YEAR INHALATION STUDY INDICATE THAT RATS EXPOSED TO 5, 10 AND 20 PPM NVP EXHIBITED BENIGN OR MALIGNANT TUMORS OF THE NASAL TISSUES. ONLY BENIGN TUMORS WERE OBSERVED AMONG FEMALES AT 10 PPM AND MALES AND FEMALES AT 5 PPM. LIVER DAMAGE WAS NOTED AT ALL DOSE LEVELS, INCLUDING A SIGNIFICANT INCREASE IN THE OCCURRENCE OF MALIGNANT TUMORS IN THE LIVERS OF THE HIGH DOSE ANIMALS. TUMORS OF THE LARYNX WERE ALSO OBSERVED AMONG THE ANIMALS

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AT THE HIGHEST DOSE. IN A SCREENING STUDY, LIVER TUMORS WERE REPORTED IN MALE MICE ADMINISTERED A SINGLE INTRAPERITONEAL INJECTION OF NVP AND ALLOWED TO MATURE TO THE AGE OF 10 MONTHS.

CARCINOGENICITY: N-VINYLPYRROLIDONE: IARC-3: UNCLASSIFIABLE AS TO CARCINOGENICITY IN HUMANS.

ADDITIONAL KNOWN HEALTH HAZARDS: NO DATA FOUND

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SECTION VII -- REACTIVITY DATA
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THIS MIXTURE IS STABLE AND HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

INCOMPATIBILITY (MATERIALS TO AVOID): ACIDS AND FREE RADICAL GENERATORS.

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

CONDITIONS TO AVOID: SEE REACTIVITY - INCOMPATIBILITY SECTION.

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SECTION VIII -- SPILL OR LEAK PROCEDURES
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STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED: SPILLS SHOULD BE CONTAINED, SOLIDIFIED AND PLACED IN SUITABLE CONTAINERS FOR DISPOSAL IN A LICENSED FACILITY. THIS MATERIAL IS NOT REGULATED BY RCRA OR CERCLA ("SUPERFUND"). WEAR APPROPRIATE RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING AND PROVIDE ADEQUATE VENTILATION DURING CLEAN-UP.

WASTE DISPOSAL METHOD: INCINERATE OR BURY IN A LICENSED FACILITY. DO NOT DISCHARGE INTO WATERWAYS OR SEWER SYSTEMS WITHOUT PROPER AUTHORITY.

CONTAINER DISPOSAL: DISPOSE OF IN A LICENSED FACILITY. RECOMMEND CRUSHING OR OTHER MEANS TO PREVENT UNAUTHORIZED REUSE.

ENVIRONMENTAL TOXICITY TEST DATA:
DEGRADABILITY IN WATER, STATIC TEST - > 60 PERCENT - GOOD POTENTIAL FOR ELIMINATION.
INHERENT BIODEGRADABILITY: ZAHN-WELLENS - > 70 PERCENT - READILY DEGRADABLE BY BIOLOGICAL PROC.
RAINBOW TROUT, STATIC 96 HOUR LC50 - 500 MG/L - PRACTICALLY NONTOXIC.

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SECTION IX -- SAFE HANDLING AND USE INFORMATION
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RESPIRATORY PROTECTION: IF VAPORS OR MISTS ARE GENERATED, WEAR A NIOSH/MSHA APPROVED ORGANIC VAPOR/MIST RESPIRATOR OR AN AIR-SUPPLIED RESPIRATOR AS APPROPRIATE.
VENTILATION REQUIREMENTS: USE LOCAL EXHAUST TO CONTROL EXPOSURE TO VAPORS/MISTS.
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.

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SECTION X -- SPECIAL PROCEDURES
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TRANSPORTATION, STORAGE, AND HANDLING: AVOID CONDITIONS LISTED IN SECTION VII. DO NOT STORE AT TEMPERATURES ABOVE 25 C (77 F) FOR EXTENDED PERIODS OF TIME. NON-HAZARDOUS POLYMERIZATION MAY OCCUR IF PRODUCT IS STORED FOR EXTENDED PERIODS OF TIME.

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.

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.

SARA TITLE III SECTION 313 INFORMATION: THIS PRODUCT DOES NOT CONTAIN TOXIC 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.

STATE OF CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65): THIS PRODUCT DOES NOT CONTAIN CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY.