

## M A T E R I A L   S A F E T Y   D A T A   S H E E T



Shipley Company, Inc.  
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## Section I - PRODUCT INFORMATION

PRODUCT NAME: MICROPOSIT(R) S1400-31 PHOTO RESIST

PRODUCT CLASS: Photoresist

EFFECTIVE DATE: 12 January 1990

MSDS # MC-00086      SUPERSEDES: 03-03-1989

PREPARED BY: T. Blakeslee

## Section II - HAZARDOUS COMPONENTS

COMPONENT	CAS #	WEIGHT%	ACGIH TLV ppm(mg/m3)	OSHA PEL ppm(mg/m3)
2-ethoxyethyl acetate	111-15-9	57	5(27)	Proposed
n-butyl acetate	123-86-4	6	150(710)	150(710)
xylene	1330-20-7	6	100(435)	100(435)
Novolak resins & photoactive cmpds.	*	31	N.A.	N.A.

\* non-hazardous

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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### Section III - HEALTH HAZARDS

CARCINOGENIC STATUS: Not considered carcinogenic by NTP, IARC and OSHA.

EXPOSURE LIMITS: Not established. Keep vapor concentrations below component TLV's.

ROUTES OF ENTRY: Inhalation of mists or vapors, eye and skin contact, ingestion, skin absorption.

ACUTE EFFECTS: Eye and skin contact can cause irritation, itching, redness, tearing, burning and inflammation. Inhalation, ingestion and skin absorption can cause headache, nausea, vomiting, dizziness, weakness, drowsiness, narcosis and exhaustion. Ingestion of large quantities can cause kidney and liver damage.

CHRONIC EFFECTS: Prolonged, repeated contact with skin can cause absorption of harmful amounts of material. Prolonged, repeated exposure can cause chronic effects with symptoms as described above and other effects including anemia, hemotological effects, damage to bone marrow, kidney, liver and testes.

NOTE: When laboratory animals have been exposed to 2-ethoxyethyl acetate birth defects and adverse effects on pregnancy have been observed.

#### EMERGENCY FIRST AID PROCEDURES:

INGESTION: Contact physician at once.

EYE CONTACT: Flush immediately with plenty of water for at least 15 minutes. Contact physician at once.

SKIN CONTACT: Flush immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. Contact physician. Wash clothing before reuse.

INHALATION: Move into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Contact a physician at once.

NOTE TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.



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#### Section IV - PHYSICAL DATA

APPEARANCE AND ODOR: Red/amber viscous solution with slightly sweet odor.  
% VOLATILE BY WEIGHT: 69%  
EVAPORATION RATE: Slower than ether  
SPECIFIC GRAVITY: 1.02  
VAPOR DENSITY(AIR=1): Heavier than air  
SOLUBILITY IN WATER: Not soluble  
BOILING RANGE: Begins ca. 120 oC  
pH: N.A.  
VAPOR PRESSURE(MMHg):

2-ethoxyethyl acetate	1.2mm at 20 C
n-butyl acetate	15mm at 25 C
xylene	6mm at 20 C

#### Section V - PHYSICAL HAZARDS

##### FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 106-125 oF  
METHOD USED: PMCC  
LOWER EXPLOSION LIMIT:

2-ethoxyethyl acetate	1.7%
n-butyl acetate	1.7%
xylene	1.1%

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical  
SPECIAL FIRE FIGHTING PROCEDURES: Use normal procedures for flammable liquid fires. Containers near fire may be cooled with water.  
UNUSUAL FIRE AND EXPLOSION HAZARDS: Pressure may build up in closed containers. This is accelerated by heat with possible liberation of combustible vapors.

##### REACTIVITY DATA

STABILITY: Stable  
CONDITIONS TO AVOID: Heat, sparks, flame  
INCOMPATIBILITY: Oxidants  
DECOMPOSITION PRODUCTS: Details unknown. May emit toxic fumes if burned.  
HAZARDOUS POLYMERIZATION: Will not occur.

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## Section VI - SPILL, LEAK AND DISPOSAL PROCEDURES

### ACTION TO TAKE FOR SPILL:

Eliminate sources of ignition, provide adequate ventilation and suitable protective clothing. Collect with inert absorbent material and place in a suitable container for disposal.

Dispose of contaminated product and materials used in cleaning up spills and leaks in a manner approved for this material.

### DISPOSAL:

Due to the nature of this product, disposal of it, or residues therefrom should be made in compliance with federal, state and local environmental laws.

Contact your Shipley Technical Representative for more information. It is your responsibility to verify that any recommended procedures comply with federal, state and local regulations for wastewater discharge.

## Section VII - PRECAUTIONS FOR SAFE USE AND HANDLING

**RESPIRATORY PROTECTION:** The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator. The respirator must be approved by the National Institute for Occupational Safety and Health for the substance of concern.

**EYE PROTECTION:** Chemical goggles.

**PROTECTIVE CLOTHING:** Chemical resistant gloves and suitable protective clothing to prevent skin contact.

**WORK PRACTICES:** Avoid skin contact. Practice good personal hygiene to prevent accidental exposure.

**VENTILATION:** Provide good general (mechanical) room ventilation. Special local exhaust ventilation is recommended at points where vapors can be released into the workplace air.



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Section VIII - SPECIAL PRECAUTIONS / ADDITIONAL INFORMATION

PRECAUTIONS TO TAKE IN HANDLING AND STORAGE: CAUTION! Combustible liquid. Store in closed original container in a cool, dry area at 50-70 oF. Keep away from light, oxidants, heat and sources of ignition. Avoid storing longer than one year.

Section IX - TRANSPORTATION

DOT PROPER SHIPPING NAME: Combustible Liquid, N.O.S.  
DOT HAZARD CLASSIFICATION: Combustible Liquid  
DOT HAZARD IDENTIFICATION NUMBER: NA1993

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#### Section X - REGULATORY INFORMATION

##### TSCA STATUS:

The products listed and their components have been manufactured in accordance with the inventory listing and premanufacture notice requirements of the Toxic Substance Control Act.

##### MA RIGHT TO KNOW LAW:

All components have been checked for inclusion on the Massachusetts Substance List.

##### CALIFORNIA Proposition 65:

This product contains 2-ethoxyethyl acetate, which has been found by the State of California to be a carcinogen or reproductive hazard.

HAZARD CATEGORIES UNDER CRITERIA OF  
OF SARA TITLE III RULES (40 CFR 370): Immediate, Delayed, Fire hazard

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND OF 40 CFR 372:

CAS #	Chemical Name	Percent by Weight
1330-20-7	xylene	6
111-15-9	2-ethoxyethyl acetate	57

#### Section XI - NOTICE

N.A. denotes no applicable information was found

THE DATA CONTAINED HEREIN IS BASED ON INFORMATION THAT SHIPLEY COMPANY BELIEVES TO BE RELIABLE, BUT NO EXPRESSED OR IMPLIED WARRANTY IS MADE WITH REGARD TO THE ACCURACY OF SUCH DATA OR ITS SUITABILITY FOR A GIVEN SITUATION. SUCH DATA RELATES ONLY TO THE SPECIFIC PRODUCT DESCRIBED AND NOT TO SUCH PRODUCTS IN COMBINATION WITH ANY OTHER PRODUCT AND NO AGENT OF SHIPLEY COMPANY IS AUTHORIZED TO VARY ANY OF SUCH DATA. SHIPLEY COMPANY AND ITS AGENTS DISCLAIM ALL LIABILITY FOR ANY ACTION TAKEN OR FOREGONE ON RELIANCE UPON SUCH DATA.