

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **EKC1020™**
 General Use: Negative Photoresist Remover
 Product Description: Organic Solvent Blend
 Revision and Date: Revision H, November 8, 2005

MANUFACTURER
 EKC Technology, Inc.
 2520 Barrington Court
 Hayward, CA 94545-1133
 (510) 784-9105

EMERGENCY PHONE NUMBERS
 (800) 424-9300
 CHEMTREC
 24 hours/day, 7 days/week

2. COMPOSITION / INFORMATION ON INGREDIENTS

	<u>WT. %</u>	<u>CAS REGISTRY #</u>
Alkylbenzene Sulfonic Acid	Proprietary	68584-22-5
Heavy Aromatic Solvent Naphtha	Proprietary	64742-94-5
Naphthalene	Proprietary	91-20-3

	EXPOSURE LIMITS 8 hrs. TWA (ppm)		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>DUPONT AEL</u>
Alkylbenzene Sulfonic Acid	None	None	None
Heavy Aromatic Solvent Naphtha	None	None	None
Naphthalene	10 ppm	10 ppm	0.1

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Ruby red liquid with an aromatic odor. Causes skin and eye burns. Harmful if inhaled. May cause respiratory tract irritation. May be toxic to aquatic organisms.

POTENTIAL HEALTH EFFECTS

INHALATION

Harmful if inhaled. May cause irritation to the upper respiratory tract.

EYE CONTACT

Causes burns

SKIN CONTACT

Causes burns

INGESTION

Swallowing this material causes burns to the mouth, throat, and stomach.

TARGET ORGANS

Central nervous system, blood, heart, stomach, liver, bladder, kidneys, eyes, lungs, thyroid, spleen, and skin

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Overexposure may aggravate existing respiratory, blood, or liver conditions or dermatitis.

CARCINOGENICITY

National Toxicology Program (NTP):	Not listed
IARC Monographs:	Not listed
OSHA:	Not listed
ACGIH:	Not listed

POTENTIAL ENVIRONMENTAL EFFECTS

May be toxic to aquatic organisms.

4. FIRST AID MEASURES

INHALATION

Remove to fresh air immediately. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

EYE CONTACT

Immediately flush eyes with water for at least 15 minutes. Have eyes examined and treated by a physician.

SKIN CONTACT

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. If redness or irritation occurs, seek medical attention.

INGESTION

DO NOT INDUCE VOMITING. Seek immediate medical attention. Maintain an open airway. Administer artificial respiration if necessary. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN

Evacuation of stomach contents should be done by means least likely to cause aspiration, such as gastric lavage after endotracheal intubation.

5. FIRE FIGHTING MEASURES

Flashpoint and Method	200°F (93°C) Tag Closed Cup (TCC)
Flammable Limits in Air % by volume	Lower: Not available Upper: Not available
Autoignition Temperature	Not available
Extinguishing Media	Foam, carbon dioxide, dry chemical

UNUSUAL FIRE AND EXPLOSION HAZARDS

Do not mix with strong oxidizers. Keep work areas free of ignition sources.

FIRE FIGHTING INSTRUCTIONS

Use water spray to cool containers and fire exposed surfaces. Shut off fuel to fire if possible to do so without hazard.

FIRE FIGHTING EQUIPMENT

Wear full protective clothing with self-contained positive pressure breathing apparatus. Do not use water except as fog.

HAZARDOUS COMBUSTION PRODUCTS

Carbon monoxide, Sulfuric acid, Sulfur dioxides, Nitrogen oxides

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES

Evacuate area and keep personnel upwind. Cut off any source of ignition and ventilate the spill area. Contain spill with absorbent material. Transfer absorbent and other contaminated materials to a UN approved covered container for disposal. Consult with Federal, State, and local regulatory agencies to determine acceptable clean-up levels. Comply with federal, state, and local regulations on reporting releases.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE

Storage in a dry, well-ventilated area 40° to 90°F (5° to 32°C) is recommended.

GENERAL

Keep in original tightly closed containers.
Keep away from strong oxidizing agents or acids.
Prevent skin and eye contact.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTION

RESPIRATORY PROTECTION

No respiratory protection is required when this material is handled under proper ventilation, such as a wet bench or fume hood. If proper ventilation is not available, use a NIOSH approved full-face respirator with canisters or cartridges specifically approved for organic vapors/acid gases. Whenever cartridges or canister respirators are used, ensure the frequent changing of the filter element. Use a supplied air respirator when in doubt of the atmospheric concentration. Consult 29 CFR 1910.134 regarding use of respirators.

PROTECTIVE CLOTHING

Take all precautions to prevent skin contact. Wear Nitrile, Neoprene or Latex clothing and gloves, and chemical resistant boots when there is a probability of liquid contact.

EYE / FACE PROTECTION

Wear chemical goggles or use chemical goggles under face shield when there is a probability of liquid contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure:	0.4 mmHg @ 68°F (20°C)	Freezing Point:	Not available
Vapor Density:	>1 (Air=1)	Appearance:	Ruby Red
Specific Gravity:	0.99 – 1.03	Boiling Range:	400° - 580°F (204° - 304°C)
Evaporation Rate:	<1 (Butyl Acetate = 1)	Odor:	Aromatic
Solubility in Water:	Negligible	Physical State:	Liquid
pH:	1.66 - 1.76		

10. STABILITY AND REACTIVITY

GENERAL

This product is stable at normal temperatures and conditions of storage.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID

Strong oxidizing agents
Corrosive when mixed with water

HAZARDOUS DECOMPOSITION

Carbon monoxide, Sulfuric acid, Sulfur dioxides, Nitrogen oxides

HAZARDOUS POLYMERIZATION

Will not normally occur.

11. TOXICOLOGICAL INFORMATION

DATA FOR EKC1020™

INHALATION

LC₅₀, rat (4 hr): 3.29 mg/l, toxic

EYE CONTACT

No information is available on this mixture.

SKIN CONTACT

LD₅₀, rabbit: >2000 mg/kg, not harmful. Considered corrosive from *in vitro* assay results.

INGESTION

LD₅₀, rat: 4060 mg/kg, not harmful.

GENOTOXICITY

Not mutagenic in bacterial cells in culture.

TARGET ORGANS

Central nervous system, blood, heart, stomach, liver, bladder, kidneys, eyes, lungs, thyroid, spleen, gastrointestinal tract, and skin

DATA FOR HEAVY AROMATIC SOLVENT NAPHTHA, A COMPONENT OF EKC1020™

EYE CONTACT

FHSA score: <12/110, slightly irritating.

SKIN CONTACT

Repeated exposure of humans to a 50% concentration did not cause irritation. There was no evidence of sensitization or photosensitization in a 100 subject human patch test.

GENOTOXICITY

Did not cause chromosome damage in whole animal studies.

DEVELOPMENTAL TOXICITY

Gavage study (rat, days 6-15 of gestation):
LOAEL for maternal toxicity = 450 mg/kg
NOAEL for maternal toxicity = 150 mg/kg
NOAEL for developmental toxicity = 450 mg/kg, the highest dose tested.
Decreased maternal weight gain and food consumption noted during the first 3 days of treatment.

SUBCHRONIC TOXICITY

Gavage study (rat, 13 weeks):
LOAEL = 300 mg/kg, the lowest dose tested
Decreased body weights and food consumption, hematologic and serum chemistry changes, increased kidney and liver weights, liver enlargement, thyroid and bladder hyperplasia, and inflammation and necrosis in the stomach noted.
TARGET ORGANS
Central nervous system, blood, bladder, thyroid, spleen, and stomach

DATA FOR ALKYL BENZENE SULFONIC ACID, A COMPONENT OF EKC1020™

EYE CONTACT

Corrosive.

TARGET ORGANS

Eyes, skin, liver, and gastrointestinal tract

SUBCHRONIC TOXICITY

Dietary study (sodium salt) (rat, 12 weeks):
NOAEL = 250 mg/kg, the highest dose given.

DATA FOR NAPHTHALENE, A COMPONENT OF EKC1020™

INHALATION

Overexposure in humans has caused headache, confusion, excitement, nausea, vomiting, sweating, irritation of the bladder, liver damage, and hemolysis.

DATA FOR NAPHTHALENE, A COMPONENT OF EKC1020™ (CONT.)

EYE CONTACT

FHSA score: 3.8/110 (unrinsed eyes), slightly irritating.
Has caused cataracts, based on human experience and animal studies.

SKIN CONTACT

Not a sensitizer.

INGESTION

LD₅₀, rat: 490 mg/kg, toxic.
LD₅₀, mouse: 533 mg/kg, harmful.

GENOTOXICITY

Not mutagenic in bacterial cells in culture; caused chromosome damage in mammalian cells in culture.

TARGET ORGANS

Nervous system, blood, heart, stomach, liver, bladder, kidneys, eyes, lungs, nasal mucosa, and skin

DEVELOPMENTAL TOXICITY

Gavage study (mouse, days 7-15 of gestation):
LOAEL = 300 mg/kg
Mortality and decreased body weight gain noted in maternal mice and decreased pup viability at birth; no evidence of selective effect on offspring.

Gavage study (rabbit, days 6-19 of gestation):
NOAEL = 120 mg/kg, the highest dose tested.

SUBCHRONIC TOXICITY

Gavage study (mouse, 90 days)
NOAEL = 133 mg/kg, the highest dose tested.
Organ weight and serum chemistry changes noted at this dose not considered adverse.

CHRONIC TOXICITY

Inhalation study (mouse, 6 hr/day, 5 days/wk, 104 weeks).
NOAEL = 10 ppm
LOAEL = 30 ppm
Increase in benign lung tumors noted in females; inflammation in lungs in both sexes.

Inhalation study (rat, 6 hr/day, 5 days/wk, 105 weeks).
LOAEL = 10 ppm, the lowest concentration tested
Increase in nasal tumors and lesions noted.

12. ECOLOGICAL INFORMATION

No data are available for EKC1020™. Data for the components are summarized below.

DATA FOR HEAVY AROMATIC SOLVENT NAPHTHA, A COMPONENT OF EKC1020™

FATE

In water, expected to biodegrade readily, bioaccumulate to some extent in aquatic species, adsorb to a moderate extent to sediments, and evaporate with an estimated half-life of 5.5 hours for a river and 5.3 days for a lake. In soil, expected to adsorb to a moderate degree and leach only slightly. Both biodegradation and evaporation expected to contribute to removal from soil. In air, expected to react with hydroxyl radicals with a half-life of approximately 2 hours.

AQUATIC TOXICITY

Expected to be toxic to aquatic organisms.

DATA FOR ALKYL BENZENE SULFONIC ACID, A COMPONENT OF EKC1020™

FATE

Expected to be slightly soluble in water; bioconcentration expected to be low, and strong adsorption to sediments expected. Rapid biodegradation predicted in soil with a half-life of weeks. Predicted to leach somewhat in soil, with strong soil adsorption. In air, expected to be removed at a moderate rate by reaction with hydroxyl radicals, with an estimated half-life of 8 hours.

AQUATIC TOXICITY

96 hr LC₅₀ Goldfish: 5.0 mg/L, toxic

DATA FOR NAPHTHALENE, A COMPONENT OF NRS EKC 1020™

FATE

Once in the atmosphere, naphthalene rapidly biodegrades with a half-life of 3-8 hours. Photolysis, evaporation, biodegradation, and adsorption may occur in water. The half-life for photolysis is 3 days. Biodegradation can occur in deep or murky water with a half-life of 7 days or several months.

A moderate degree of bioconcentration occurs in fish. It is adsorbed to soil to a moderate degree.

AQUATIC TOXICITY

24 hr EC₅₀, Brine shrimp: 2.89 mg/L, toxic.
24 hr EC₅₀, Green algae: 33 mg/L, harmful.
48 hr LC₅₀, Midge: 20.7 mg/L, harmful.
48 hr LC₅₀, Daphnia magna: 3.4 mg/L, toxic.
96 hr LC₅₀, Coho salmon: 3.22 mg/L, toxic.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Consult 40 CFR, Parts 261 and 268, state, and local regulations for guidance on disposal of this product. Incineration at a facility with appropriate permits or authorizations is the recommended method of disposal.

CONTAINER DISPOSAL

Empty containers retain product residue. Observe all hazard precautions. Keep away from heat, sparks, and flames. Do not distribute, make available, or reuse empty containers except for storage and shipment of original product. Remove all hazardous product residue, and puncture or otherwise destroy empty containers before disposal. Consult 40 CFR, Parts 261 and 268 for guidance on disposal.

14. TRANSPORT INFORMATION

DOT/IMO/ICAO/IATA

Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (CONTAINS ALKYL BENZENE SULFONIC ACID)
Hazard Class	8
Identification number	UN 3265
Packing group	II
Labels required	Corrosive
IMDG page number	8147-1

15. REGULATORY INFORMATION

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Components of this product are listed on the TSCA Inventory.

PROPOSITION 65

WARNING. This product contains a chemical known to the State of California to cause cancer.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 Hazard Categories 313	Acute This product contains naphthalene at an upperbound concentration of 3% which is 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.
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CERCLA (COMPREHENSIVE RESPONSE COMPENSATION AND LIABILITY ACT)

Naphthalene	RQ = 100 lbs.
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We recommend you contact local authorities to determine if there are may be other local reporting requirements.

16. OTHER INFORMATION

Because the health effects from exposure to EKC1020™ have not been fully evaluated, exposure should be kept to the lowest level possible. This material is for industrial use and should only be used under the supervision of a technically qualified individual.

LABEL INFORMATION

NFPA CODES

Health	3
Fire	1
Reactivity	1
Specific Hazard	COR

REVISION SUMMARY

Rev. H	Revision of Label
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