

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

APOL-LO 3200 Series

Negative Lift-Off Photoresist

Revision Date: 6/12/2018


Supplier:

KemLab
254 W Cummings Park
Woburn, MA 01801

For non-emergency information contact: 781-281-0174

Emergency telephone PERS-ER US/Canada: 1-800-633-8253
International: 1-801-629-0667

2. HAZARDS IDENTIFICATION

Hazard Pictograms:						
Signal Word:	Warning					
Hazard Category:	Flammable Liq Cat 3					
Hazard Statements:	H226: Flammable liquid and vapour					
Precautionary Statements:	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P233: Keep container tightly closed P240: Ground/bond container and receiving equipment P241: Use explosion-proof electrical/ventilating/light/.../equipment P242: Use only non-sparking tools P243: Take precautionary measures against static discharge P280: Wear protective gloves/protective clothing/eye protection/face protection P403+233: Store in a well ventilated place. Keep container tightly closed P501: Dispose of contents/container in accordance with					
Hazards not otherwise classified:	Not applicable, none known.					

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Electronic grade propylene glycol monomethyl ether acetate	108-65-6	> 50.0 %
Mixed cresol novolak resin	9016-83-5	< 50.0 %
1,3,4,6-Tetrakis(methoxymethyl)glycoluril	17464-88-9	< 3.0 %
Melamine/formaldehyde resin	9003-08-1	< 3.0 %
Proprietary dye		< 1.0 %
Proprietary Additives		< 1.0 %

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting if person is conscious. Immediate medical attention is required. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point ca.40 - 46 °C (104 - 115.00 °F)

Suitable extinguishing media: Use water spray, foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting: This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Pressure may build up in closed containers with possible liberation of combustible vapors.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective clothing.

Wear respiratory protection.

Eliminate all ignition sources.

Environmental precautions

Prevent the material from entering drains or water courses.
 Do not discharge directly to a water source.
 Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up

Contain spills immediately with inert materials (e.g., sand, earth).
 Transfer into suitable containers for recovery or disposal.
 Finally flush area with plenty of water.

7. HANDLING AND STORAGE

Handling

Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.

Storage

Storage conditions: Store in original container. Keep away from heat and sources of ignition.
 Storage area should be: cool, dry, well ventilated, out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Electronic grade propylene glycol monomethyl ether acetate	USA. Workplace Environmental Exposure Levels (WEEL)	TWA	50 ppm

Eye protection: Goggles

Hand protection: Butyl rubber or nitrile gloves. Other chemical resistant gloves may be recommended by your safety professional.

Skin and body protection: Normal work PPE wear.

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. 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.

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Color	Red Amber
Odor	ester-like
pH	neutral
Boiling point/boiling range	146 °C (295.00 °F)
Flash point	46 °C (104 - 115.00 °F)

Component: **Electronic grade propylene glycol monomethyl ether acetate**

Vapour pressure	3.7 mmHg at 20 °C (68 °F)
Relative vapour density	Heavier than air
Water solubility	insoluble
Relative density	0.97 - 1.03
Evaporation rate	Slower than ether
VOC's	500 - 1000 g/l

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under normal conditions
Conditions to avoid	Exposure to sunlight. Heat, flames and sparks. contact with incompatible materials
Materials to avoid	Oxidizing agents
Hazardous decomposition products	Combustion will generate:, oxides of carbon, nitrogen oxides (NOx), phenols, Hydrogen fluoride, Aldehydes, acrid smoke and irritating fumes
polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Electronic grade propylene glycol monomethyl ether acetate**

Acute oral toxicity	LD50 rat 8,532 mg/kg
Acute inhalation toxicity	LC50 rat 6 h 23.49 mg/l
Acute dermal toxicity	LD50 rabbit >5,000 mg/kg

Toxicity to reproduction

Dermal teratology testing of this solvent (with less than 3% beta isomer) revealed no maternally toxic, teratogenic or fetotoxic responses in rats or rabbits exposed to concentrations of 1,000 and 2,000 mg/kg per day.

Mutagenicity

No significant mutagenic response was observed and the carcinogenic potential of the material is therefore considered to be low.

Carcinogenicity

No component known to be carcinogenic

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appears in this section when such data is available.

Ecotoxicity effects

Toxicity to fish

LC50 Fathead minnow (Pimephales promelas) 96 h
161 mg/l

Toxicity to aquatic invertebrates

EC50 Daphnia magna 48 h
>500 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal

Dispose in accordance with all local, state (provincial), and federal regulations. Send waste to an approved waste disposal facility. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

Proper shipping name: RESIN SOLUTION
UN-Number: UN 1866
Hazard Class: 3
Packing group: III

15. REGULATORY INFORMATION

Hazard Rating

	Health	Fire	Reactivity
NFPA	2	2	0

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate, delayed, flammability hazard

SARA TITLE III: Section 313 Information (40CFR372)

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

US. Toxic Substances Control Act (TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

Prepared by: KemLab
Revision Date: 06/19/2018

Disclaimer: *The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.*