





1 Identification of the substance/mixture and of the company

- **Product identifier**
- **Trade name:** LOR A Series Resists
- **Product number:**
G516602, G516603, G516604, G516605, G516606, G516607, G516608, G516658, G516609, G516610, G516611, G516612, G516614, G516616, G516619
- **Application of the substance / the preparation** Photoresist
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MicroChem Corp.
90 Oak Street
P.O. Box 426
Newton, MA 02464-0002 USA
- **Information department:**
Product Safety
Email: productsafety@microchem.com
- **Emergency telephone number:**
MicroChem Corp : 617-965-5511
Chemtec USA Emergency : 800-424-9300
Chemtec International Emergency : 703-527-3887

2 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

120-92-3	cyclopentanone	 H226;  H315; H319	65-90%
107-98-2	1-methoxy-2-propanol	 H226;  H336	5-25%
	proprietary dye	H412	0.1-2%

· **Additional Components:**

102322-80-5	Polyaliphatic imide copolymer	H303; H313	1-20%
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3 Hazards identification

- **Classification of the substance or mixture**



GHS02 Flame

H226 Flammable liquid and vapor.



GHS07

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Trade name: LOR A Series Resists

(Contd. of page 1)

· Hazard pictograms



GHS02 GHS07

· Signal word Warning

· Hazard statements

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 2

Fire = 3

Reactivity = 0

4 First aid measures

· After inhalation: Supply fresh air or oxygen; call for doctor.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact: Rinse opened eye for several minutes under running water and then consult a doctor.

· After swallowing: Seek medical treatment.

5 Firefighting measures· Suitable extinguishing agents: CO₂, sand, extinguishing powder. Do not use water.

· For safety reasons unsuitable extinguishing agents: Water with full jet

· Special hazards arising from the substance or mixture No further relevant information available.

(Contd. on page 3)

Trade name: LOR A Series Resists

(Contd. of page 2)

· **Protective equipment:** Wear SCBA.**6 Accidental release measures**· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

No release to water in manufacturing, processing, use, or disposal.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage· **Handling:**· **Precautions for safe handling**

Ensure good ventilation/exhaust at the workplace.

Prevent formation of aerosols.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

· **Storage:**· **Requirements to be met by storerooms and containers:** No special requirements.· **Information about storage in one common storage facility:** Not required.· **Further information about storage conditions:** Keep container tightly sealed.· **Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection**· **Additional information about design of technical systems:** No further data; see item 7.· **Components with limit values that require monitoring at the workplace:****107-98-2 1-methoxy-2-propanol**REL Short-term value: 540 mg/m³, 150 ppmLong-term value: 360 mg/m³, 100 ppmTLV Short-term value: 553 mg/m³, 150 ppmLong-term value: 369 mg/m³, 100 ppm· **Additional information:** The lists that were valid during the creation were used as basis.· **Personal protective equipment:**· **General protective and hygienic measures:**

Keep away from food and beverages.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

(Contd. on page 4)

Trade name: LOR A Series Resists

(Contd. of page 3)

- **Respiratory equipment:**
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves** Nitrile rubber, NBR
- **Penetration time of glove material** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· General Information

· Appearance:

Form: Fluid
Color: Various colors
Clear
Red

· **Odor:** Characteristic
· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 120°C (248 °F)

· **Flash point:** 30°C (86 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 270°C (518 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower: 2.3 Vol %
Upper: Not determined.

· **Vapor pressure at 20°C (68 °F):** 12 hPa (9 mm Hg)

· **Density:** Not determined.
· **Relative density** Not determined.
· **Vapour density** Not determined.
· **Evaporation rate** Not determined.

(Contd. on page 5)

Trade name: LOR A Series Resists

(Contd. of page 4)

· **Solubility in / Miscibility with Water:**

Not miscible or difficult to mix.

· **Segregation coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic:

Not determined.

Kinematic:

Not determined.

· **Other information**

Name	Number	Sp. Grav.	Vol. (%by wt.)	VOC (g/L)
LOR 0.5A	G516602	0.965	98	945
LOR 0.7A	G516603	0.968	97	940
LOR 1A	G516604	0.973	96	940
LOR 2A	G516605	0.977	95	935
LOR 3A	G516606	0.98	94	920
LOR 4A	G516607	0.982	93	915
LOR 5A	G516608	0.984	92	905
LOR 6A	G516658	0.986	92	905
LOR 7A	G516609	0.988	91	900
LOR 8A	G516610	0.988	90	895
LOR 10A	G516611	0.99	89	885
LOR 15A	G516612	0.99	87	860
LOR 20A	G516614	0.99	86	850
LOR 30A	G516616	0.99	84	830
LOR 50A	G516619	0.995	81	820

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

12 Ecological information

- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential:** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water

(Contd. on page 6)

USA

Trade name: LOR A Series Resists



(Contd. of page 5)

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- Waste treatment methods
- Recommendation: No release to water in manufacturing, process, use or disposal.
- Uncleaned packagings:
- Recommendation: Disposal must be made in accordance with Federal, State, and Local regulations.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN1866
· UN proper shipping name	
· DOT, IMDG, IATA	RESIN SOLUTION
· ADR	1866 RESIN SOLUTION
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids.
· Label	3
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E,S-E
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN1866, RESIN SOLUTION, 3, III

USA

(Contd. on page 7)

Trade name: LOR A Series Resists

(Contd. of page 6)

15 Regulatory information

· Sara

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed or comply with TSCA regulations.

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Warning· **Hazard statements**

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

(Contd. on page 8)

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(Contd. of page 7)

- P102 *Keep out of reach of children.*
- P103 *Read label before use.*
- P210 *Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
- P241 *Use explosion-proof electrical/ventilating/lighting/equipment.*
- P303+P361+P353 *IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*
- P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Product safety department

· **Contact:** Mr. Bedet

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)