




1 Identification of the substance/mixture and of the company

- **Product identifier**
- **Trade name:** 950 PMMA Series Resists in Chlorobenzene
- **Product number:**
950C1, 950C2, 950C3, 950C4, 950C4.5, 950C5, 950C6, 950C6.5, 950C7, 950C7.5, 950C8, 950C9, 950C10, 950C11, 950C12, 950C15
- **Application of the substance / the preparation** Photoresist
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MicroChem Corp
90 Oak Street, PO Box 426
Newton, MA 02464-0002
- **Information department:**
Product Safety
Email: productsafety@microchem.com
- **Emergency telephone number:**
MicroChem Corp : 617-965-5511
Chemtrec USA Emergency : 800-424-9300
Chemtrec 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:**

108-90-7	chlorobenzene	 H226;  H411;  H332	85-100%
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· **Additional Components:**

9011-14-7	Poly(methylmethacrylate)		1-15%
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3 Hazards identification

- **Classification of the substance or mixture**



GHS02 Flame

H226 Flammable liquid and vapor.



GHS09 Environment

H411 Toxic to aquatic life with long lasting effects.



GHS07

H332 Harmful if inhaled.

H303 May be harmful if swallowed.

· **Label elements**

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

(Contd. on page 2)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 1)

· Hazard pictograms



GHS02 GHS07 GHS09

· Signal word Warning

· Hazard-determining components of labelling:

chlorobenzene

· Hazard statements

H226 Flammable liquid and vapor.

H303 May be harmful if swallowed.

H332 Harmful if inhaled.

H411 Toxic to aquatic life with long lasting effects.

· 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.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

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 Health = 2

FIRE 3 Fire = 3

REACTIVITY 0 Reactivity = 0

4 First aid measures

· General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air.

Seek medical treatment.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact: Rinse opened eye for several minutes under running water.

· After swallowing: Do not induce vomiting; immediately call for medical help.

USA

(Contd. on page 3)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 2)

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.
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
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.
Protect from exposure to the light.
- **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:**

108-90-7 chlorobenzene

PEL () 350 mg/m³, 75 ppmTLV () 46 mg/m³, 10 ppm

BEI

- **Additional information:** The lists that were valid during the creation were used as basis.

(Contd. on page 4)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 3)

- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from food and beverages.
Wash hands before breaks and at the end of work.
- **Respiratory equipment:**
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves** PVA gloves
- **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:	Clear
· Odor:	Mild
· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	132°C (270 °F)
· Flash point:	28°C (82 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	590°C (1094 °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:	1.3 Vol %
Upper:	11.0 Vol %
· 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.
· Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.

(Contd. on page 5)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 4)

· 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)
950C1	M240001	1.106	99	1095
950C2	M240002	1.107	98	1085
950C3	M240003	1.108	97	1075
950C4	M240004	1.109	96	1065
950C4.5	M240504	1.109	95.5	1060
950C5	M240005	1.110	95	1055
950C6	M240006	1.111	94	1045
950C6.5	M240506	1.112	93.5	1040
950C7	M240007	1.113	93	1035
950C7.5	M240507	1.113	92.5	1030
950C8	M240008	1.114	92	1025
950C9	M240009	1.115	91	1015
950C10	M240010	1.115	90	1005
950C11	M240011	1.116	89	995
950C12	M240012	1.117	88	985
950C15	M240015	1.120	85	950

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:

· LD/LC50 values that are relevant for classification:

108-90-7 chlorobenzene

Oral	LD50	2290 mg/kg (rat)
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· Primary irritant effect:

· on the skin: No irritant effect.

· on the eye: No 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.

· Ecotoxicological effects:

· Remark: Toxic for fish

(Contd. on page 6)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 5)

· **Additional ecological information:**· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

13 Disposal considerations· **Waste treatment methods**· **Recommendation:**

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

· **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, mixture

· **ADR**

1866 RESIN SOLUTION, mixture, ENVIRONMENTALLY HAZARDOUS

· **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:**

Product contains environmentally hazardous substances: chlorobenzene

· **Marine pollutant:**

Yes

· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

30

(Contd. on page 7)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 6)

· EMS Number:	F-E,S-D
· Segregation groups	Liquid halogenated hydrocarbons
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN1866, RESIN SOLUTION, mixture, ENVIRONMENTALLY HAZARDOUS, 3, III

15 Regulatory information

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

108-90-7 | chlorobenzene

· 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)

108-90-7 | chlorobenzene

D

· IARC (International Agency for Research on Cancer)

9011-14-7 | Poly(methylmethacrylate)

3

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

108-90-7 | chlorobenzene

A3

· 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).

(Contd. on page 8)

Trade name: 950 PMMA Series Resists in Chlorobenzene

(Contd. of page 7)

· Hazard pictograms



GHS02 GHS07 GHS09

· Signal word Warning

· Hazard-determining components of labelling:

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· Hazard statements

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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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent