MICRO CHEM

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.05.2016 *Version number 7* *Revision: 18.05.2016*

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: SU-8 2000 Series Resists**

· **Article number:**
Y111004, Y111007, Y111014, Y111022, Y111029, Y111045, Y111053, Y111058, Y111064, Y111069, Y111070, Y111072, Y111074, Y111075, Y111077

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use** SU16 Manufacture of computer, electronic and optical products, electrical equipment
· **Application of the substance / the mixture** Photoresist

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
MicroChem Corp.
200 Flanders Road
Westborough, MA 01581
Tel: (617) 965-5511
Fax: (617) 965-5818

The person responsible in EU Member State:

ONLY REPRESENTATIVE
Pierre Kirsch, PhD
President
REACH NATION SPRL
Avenue du Pesage, 18/9
B-1050 Brussels, Belgium
e-mail: fc813546@skynet.be
mobile: +32 473 974 002

*Only Representative for select Substances in this mixture. Other substances are being supported under REACH by Only Representatives of Non-European suppliers and others may be exempt from registration.

· **Further information obtainable from:**
Product Safety
Email: productsafety@microchem.com
· **1.4 Emergency telephone number:**
MicroChem Corp : 617-965-5511
Chemtrec USA Emergency : 800-424-9300 (24 hr)
Chemtrec International Emergency : 703-527-3887 (24 hr)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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GHS07

Acute Tox. 4	*H302*	*Harmful if swallowed.*
Acute Tox. 4	*H332*	*Harmful if inhaled.*
Skin Irrit. 2	*H315*	*Causes skin irritation.*
Eye Irrit. 2	*H319*	*Causes serious eye irritation.*
Skin Sens. 1	*H317*	*May cause an allergic skin reaction.*

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008***
The product is classified and labelled according to the CLP regulation.
· ***Hazard pictograms***

GHS02 GHS07 GHS09

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
Cyclopentanone
Epoxy resin
Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-,(OC-6-11)-hexafluoroantimonate (1-) (1:2)
Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
· ***Hazard statements***

H226	*Flammable liquid and vapour.*
H302+H332	*Harmful if swallowed or if inhaled.*
H315	*Causes skin irritation.*
H319	*Causes serious eye irritation.*
H317	*May cause an allergic skin reaction.*
H411	*Toxic to aquatic life with long lasting effects.*

· ***Precautionary statements***

P210	*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
P261	*Avoid breathing dust/fume/gas/mist/vapours/spray.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P273	*Avoid release to the environment.*
P301+P310	*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P304+P341	*IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.*
P333+P313	*If skin irritation or rash occurs: Get medical advice/attention.*
P337+P313	*If eye irritation persists: Get medical advice/attention.*
P370+P378	*In case of fire: Use for extinction: Alcohol resistant foam.*
P370+P378	*In case of fire: Use for extinction: Fire-extinguishing powder.*
P370+P378	*In case of fire: Use for extinction: Carbon dioxide.*
P302+P352	*IF ON SKIN: Wash with plenty of soap and water.*
P403+P235	*Store in a well-ventilated place. Keep cool.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

SECTION 3: Composition/information on ingredients

· ***3.2 Chemical characterisation: Mixtures***
· ***Description:*** *Mixture of substances listed below with nonhazardous additions.*

· ***Dangerous components:***

CAS: 28906-96-9	*Epoxy resin* *Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317*	*3-75%*
CAS: 120-92-3 *EINECS: 204-435-9*	*Cyclopentanone* *Flam. Liq. 3, H226; Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319*	*13-96%*
CAS: 71449-78-0	*Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)* *Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317*	*.25-2.5%*
CAS: 108-32-7 *EINECS: 203-572-1*	*Propylene carbonate* *Skin Irrit. 2, H315; Eye Irrit. 2, H319*	*0.3-5%*
CAS: 89452-37-9	*Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-,(OC-6-11)-hexafluoroantimonate (1-) (1:2)* *Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317*	*.25-2.5%*

· ***Additional information:*** *For the wording of the listed hazard phrases refer to section 16.*

SECTION 4: First aid measures

· ***4.1 Description of first aid measures***
· ***General information:*** *Immediately remove any clothing soiled by the product.*
· ***After inhalation:*** *In case of unconsciousness place patient stably in side position for transportation.*
· ***After skin contact:*** *Immediately wash with water and soap and rinse thoroughly.*
· ***After eye contact:***
Wash eyes immediately with a large amount of water or normal saline, occassionally lifting upper and lower eye lids until no evidence of chemical remains (at least 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.
Wash eyes immediately with a large amount of water or normal saline occassionally lifting upper and lower eye lids until not evidence of chemical reamins (at least 20 minutes). Remove contact lenses if present and easy to remove. Get medical attention immediately.
· ***After swallowing:*** *If symptoms persist consult doctor.*
· ***4.2 Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*
· ***4.3 Indication of any immediate medical attention and special treatment needed*** *Treat symptomatically.*

SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
Alcohol resistant foam
Fire-extinguishing powder
Carbon dioxide

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· **For safety reasons unsuitable extinguishing agents:**
Water with full jet
Water
· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **6.3 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
· **6.4 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.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Ensure good ventilation/exhaust at the workplace.
Prevent formation of aerosols.
· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Use explosion-proof apparatus / fittings and spark-proof tools.
Protect against electrostatic charges.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and containers:**
Due to photo-sensitivity, store product in brown-glass or stainless steel receptacles.
Store in a cool location.
· **Information about storage in one common storage facility:**
Do not store together with alkalis (caustic solutions).
Do not store together with oxidising and acidic materials.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Store receptacle in a well ventilated area.
· **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· ***Additional information about design of technical facilities:*** *No further data; see item 7.*

· ***8.1 Control parameters***
· ***Ingredients with limit values that require monitoring at the workplace:***
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· ***Additional information:*** *The lists valid during the making were used as basis.*

· ***8.2 Exposure controls***
· ***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.
· ***Respiratory protection:***
In case of low exposure use cartridge respirator. In case of intensive or longer exposure use self-contained respiratory protective device.
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· ***Material of gloves***
Nitrile rubber, NBR
Butyl rubber, BR
· ***Penetration time of glove material***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· ***Eye protection:***

Tightly sealed goggles

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Liquid*
Colour:	*According to product specification*
· ***Odour:***	*Sweetish*
· ***Odour threshold:***	*Not determined.*
· ***pH-value:***	*Not determined.*
· ***Change in condition***	
Melting point/Melting range:	*Undetermined.*

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Boiling point/Boiling range:	*130 °C*
· ***Flash point:***	*30 °C*
· ***Flammability (solid, gaseous):***	*Not applicable.*
· ***Ignition temperature:***	*430 °C*
· ***Decomposition temperature:***	*Not determined.*
· ***Self-igniting:***	*Product is not selfigniting.*
· ***Danger of explosion:***	*Product is not explosive. However, formation of explosive air/vapour mixtures are possible.*
· ***Explosion limits:***	
Lower:	*Not determined.*
Upper:	*Not determined.*
· ***Vapour pressure:***	*Not determined.*
· ***Density:***	
Relative density	*Not determined.*
Vapour density	*Not determined.*
Evaporation rate	*Not determined.*
· ***Solubility in / Miscibility with water:***	*Not miscible or difficult to mix.*
· ***Partition coefficient (n-octanol/water):***	*Not determined.*
· ***Viscosity:***	
Dynamic:	*Not determined.*
Kinematic:	*Not determined.*

· ***9.2 Other information***

Name	*Number*	*Sp. Grav.*	*Vol.(%by wt.)*	*VOC (g/L)*
SU-8 2000.1	*Y111004*	*1.00*	*94-98*	*960*
SU-8 2000.2	*Y111007*	*1.00*	*90-95*	*930*
SU-8 2000.5	*Y111014*	*1.07*	*85-90*	*920*
SU-8 2001	*Y111022*	*1.100*	*80-85*	*860*
SU-8 2002	*Y111029*	*1.123*	*70-75*	*800*
SU-8 2005	*Y111045*	*1.164*	*50-55*	*640*
SU-8 2007	*Y111053*	*1.175*	*45-50*	*550*
SU-8 2010	*Y111058*	*1.187*	*40-45*	*500*
SU-8 2015	*Y111064*	*1.200*	*35-40*	*430*
SU-8 2025	*Y111069*	*1.219*	*30-35*	*380*
SU-8 2035	*Y111070*	*1.227*	*20-30*	*370*
SU-8 2050	*Y111072*	*1.233*	*20-30*	*345*
SU-8 2075	*Y111074*	*1.236*	*20-30*	*320*
SU-8 2100	*Y111075*	*1.237*	*20-30*	*310*
SU-8 2150	*Y111077*	*1.238*	*20-30*	*285*

SECTION 10: Stability and reactivity

· ***10.1 Reactivity*** *No further relevant information available.*
· ***10.2 Chemical stability*** *Stable under normal use conditions*
· ***Thermal decomposition / conditions to be avoided:*** *No decomposition if used according to specifications.*
· ***10.3 Possibility of hazardous reactions*** *Exothermic polymerisation.*

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· ***10.4 Conditions to avoid***
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Contact with incompatible materials.
· ***10.5 Incompatible materials:*** *Strong Oxidizing Agents, Strong Acids, Strong Bases*
· ***10.6 Hazardous decomposition products:***
Carbon monoxide
Corrosive gases/vapours
Danger of forming toxic pyrolysis products.
Antimony oxide

SECTION 11: Toxicological information

· ***11.1 Information on toxicological effects***
· ***Acute toxicity***
Harmful if swallowed or if inhaled.

· ***LD/LC50 values relevant for classification:***		
28906-96-9 Epoxy resin		
Oral	*LD50*	*>2000 mg/kg (Rat)*
Dermal	*LD50*	*>2000 mg/kg (rabbit)*
Inhalative	*LC50*	*>5 mg/L (Rat)*
120-92-3 Cyclopentanone		
Oral	*LD50*	*1820 mg/kg (Rat)*
Dermal	*LD50*	*>2000 mg/kg (rabbit)*
Inhalative	*LC50/4 h*	*19.5 mg/l (Rat)*
108-32-7 Propylene carbonate		
Oral	*LD50*	*>29000 mg/kg (Rat)*
Dermal	*LD50*	*>20.000 mg/kg (rabbit)*

· ***Specific symptoms in biological assay:***
Formaldehyde, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol] CAS 28906-96-9:
This material was mutagenic in the Ames bacterial assay and showed a positive result in a mammalian cell chromosomal aberration test.
Formaldehyde, polymer with (chloromethyl)oxirance and 4,4'-(1-methylethylidene)bis[phenol] CAS 28906-06-9: This material was mutagenic in the Ames bacterial assay and showed a positive result in a mammalian cell chromosomal aberration test.
· ***Primary irritant effect:***
· ***Skin corrosion/irritation***
Causes skin irritation.
· ***Serious eye damage/irritation***
Causes serious eye irritation.
· ***Respiratory or skin sensitisation***
May cause an allergic skin reaction.
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
· ***Germ cell mutagenicity*** *Based on available data, the classification criteria are not met.*
· ***Carcinogenicity*** *Based on available data, the classification criteria are not met.*
· ***Reproductive toxicity*** *Based on available data, the classification criteria are not met.*
· ***STOT-single exposure*** *Based on available data, the classification criteria are not met.*
· ***STOT-repeated exposure*** *Based on available data, the classification criteria are not met.*
· ***Aspiration hazard*** *Based on available data, the classification criteria are not met.*

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SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
28906-96-9 Epoxy resin	
100<LC/EC/IC 50	≤1000 mg/l (algae) ≤1000 mg/l (fish) ≤1000 mg/l (invertebrates)
89452-37-9 Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-,(OC-6-11)-hexafluoroantimonate (1-) (1:2)	
LC50/24 h LC50/48 hr	4.4 mg/l (daphnia) 0.68 mg/L (daphnia)
71449-78-0 Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)	
LC50/24 h LC50/48 hr	4.4 mg/l (daphnia) 0.68 mg/L (daphnia)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Toxic for fish
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Disposal must be made in accordance with International, National, and regional regulations.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, IMDG, IATA**	UN1866
· **14.2 UN proper shipping name**	
· **ADR, IATA**	RESIN SOLUTION

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· **IMDG**	RESIN SOLUTION (Sulfonium, diphenyl[4-(phenylthio) phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1), Sulfonium, (thiodi-4.1-phenylene) bis[diphenyl-,(OC-6-11)-hexafluoroantimonate (1-) (1:2)), MARINE POLLUTANT
· **14.3 Transport hazard class(es)**	
· **ADR, IMDG, IATA**	
· **Class**	3 Flammable liquids.
· **Label**	3
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	Yes
· **14.6 Special precautions for user**	Warning: Flammable liquids.
· **Danger code (Kemler):**	30
· **EMS Number:**	F-E,S-D
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	5L
· **Transport category**	3
· **Tunnel restriction code**	D/E
· **UN "Model Regulation":**	UN1866, RESIN SOLUTION, 3, III

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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.

· **Relevant phrases**
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H400 Very toxic to aquatic life.

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H410 Very toxic to aquatic life with long lasting effects.

· ***Classification according to Regulation (EC) No 1272/2008***
Art. 9(1) of Regulation (EC) No. 1272/2008 was used for classification purposes.

· ***Department issuing SDS:*** *Product safety department*
· ***Contact:*** *Mr. Cole*
· ***Revision History:***
The business address of the manufacturer in Section 1 was updated. The Section 2 hazard classification of this mixture was revised to conform to Art. 9(1) of Regulation (EC) No. 1272/2008. The toxicology data in Sections 11 and 12 were revised
· ***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 Organisation
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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2