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

1.1 Product identifier

- Trade name: SU-8 TF 6000 Series Resists
- Article number: Y143015, Y143027, Y143037, Y143051, Y143061

1.2 Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

- 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:
  Kayaku Advanced Materials, Inc.
  200 Flanders Road
  Westborough, MA 01581
  Tel: (617) 965-5511
  Fax: (617) 965-5818

The person responsible in EU Member State:

ONLY REPRESENTATIVE
Lionel Marcélis, PhD
President
REACH NATION SRL
22 Rue Notre Dame au Bois
1440 Braine-le-Château
BELGIUM
Tel : +32491880259

*Only Representative for 2-methoxy-1-methylethyl acetate (CAS 108-65-6) only. 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@kayakuAM.com
- Emergency telephone number:
  Kayaku Advanced Materials : 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.

- GHS05 corrosion
  Eye Dam. 1  H318  Causes serious eye damage.
Trade name: SU-8 TF 6000 Series Resists

GHS07

Acute Tox. 4  H332  Harmful if inhaled.
Skin Irrit. 2  H315  Causes skin irritation.
Skin Sens. 1  H317  May cause an allergic skin reaction.
STOT SE 3  H336  May cause drowsiness or dizziness.

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  GHS05  GHS07

- Signal word Danger

- Hazard-determining components of labelling:
gamma-Butyrolactone
Epoxy resin
1-Methoxy-2-propanol acetate

- Hazard statements
H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.

- Precautionary statements
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261  Avoid breathing dust/fume/gas/mist/vapours/spray.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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 to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.
P403+P235 Store in a well-ventilated place. Keep cool.
P501  Dispose of contents/container in accordance with local/regional/national/international regulations.
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:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Index number</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-92-3</td>
<td>204-435-9</td>
<td>606-025-00-9</td>
<td>Cyclopentanone</td>
<td>25-50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319</td>
<td></td>
</tr>
<tr>
<td>108-65-6</td>
<td>203-603-9</td>
<td>607-195-00-7</td>
<td>1-Methoxy-2-propanol acetate</td>
<td>25-50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3, H226; STOT SE 3, H336</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3, H226; STOT SE 3, H336; Flam. Liq. 3, H226</td>
<td></td>
</tr>
<tr>
<td>96-48-0</td>
<td>202-509-5</td>
<td></td>
<td>Epoxy resin</td>
<td>10-25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flam. Liq. 3, H226; STOT SE 3, H336; Flam. Liq. 3, H226</td>
<td></td>
</tr>
</tbody>
</table>

Additional Components:

- Proprietary Photoacid Initiator
  - Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H332
  - <1%

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:
  - Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- 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, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.
- After swallowing:
  - Do not induce vomiting; call for medical help immediately.

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

(Contd. on page 4)
Trade name: SU-8 TF 6000 Series Resists

52.1.3 Carbon dioxide
· For safety reasons unsuitable extinguishing agents:
  Water with full jet
  Water
· 5.2 Special hazards arising from the substance or mixture
  Containers may explode due to pressure increase when container is exposed to extreme heat. Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail.
· 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 to enter sewers/surface or ground water.
  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.
· 6.3 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
· 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.
  Keep receptacles tightly sealed.
· Information about fire - and explosion protection:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
  Use explosion-proof apparatus / fittings and spark-proof tools.
· 7.2 Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and containers: Store in a cool location.
    · Information about storage in one common storage facility:
      Do not store together with oxidising and acidic materials.
      Do not store together with amines.
    · Further information about storage conditions:
      Store in cool, dry conditions in well sealed containers.
      Store receptacle in a well ventilated area.
      Protect from heat and direct sunlight.
 SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters
- Additional information about design of technical facilities: No further data; see item 7.

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-65-6 1-Methoxy-2-propanol acetate</td>
</tr>
<tr>
<td>IOELV</td>
</tr>
<tr>
<td>Long-term value: 275 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Skin</td>
</tr>
</tbody>
</table>

- 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
- 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: Clear to light yellow
    - Odour: Sweetish
Odour threshold: Not determined.

pH-value: Not determined.

Change in condition
Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: 130 °C

Flash point: 30 °C

Flammability (solid, gas): Not applicable.

Ignition temperature: 315 °C

Decomposition temperature: Not determined.

Auto-ignition temperature: Product is not selfigniting.

Explosion properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:
Lower: 1.3 Vol %
Upper: 10.8 Vol %

Vapour pressure at 20 °C: 11 hPa

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

Solubility in / Miscibility with water: Partly miscible.
Partition coefficient: n-octanol/water: Not determined.

Viscosity:
Dynamic: Not determined.
Kinematic: Not determined.

Solvent content:
Solids content: 10-70 %

9.2 Other information
No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No further relevant information available.

10.2 Chemical stability
Stable

10.3 Possibility of hazardous reactions
Exothermic polymerisation.

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 Bases, Strong Acids, Amines

10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide

EU
Trade name: SU-8 TF 6000 Series Resists

Danger of forming toxic pyrolysis products.
Corrosive gases/vapours

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects
· Acute toxicity
  Harmful if inhaled.
· Primary irritant effect:
  · Skin corrosion/irritation
    Causes skin irritation.
· Serious eye damage/irritation
  Causes serious eye damage.
· Respiratory or skin sensitisation
  May cause an allergic skin reaction.
· Additional toxicological information:
  · 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
    May cause drowsiness or dizziness.
· 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.

SECTION 12: Ecological information

· 12.1 Toxicity
· Aquatic toxicity: No further relevant information available.
· 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.
· Additional ecological information:
  · General notes:
    Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· 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.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.02.2021
Version number 4
Revision: 24.02.2021

Trade name: SU-8 TF 6000 Series Resists

(Contd. of page 7)

· 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, IMDG, IATA
  RESIN SOLUTION

· 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:
  No

· 14.6 Special precautions for user
· Hazard identification number (Kemler code):
  Warning: Flammable liquids.
  30
· EMS Number:
  F-E,S-E

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
· ADR, IMDG, IATA
  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.

· Directive 2012/18/EU
· REGULATION (EC) No 1907/2006 ANNEX XVII
  Conditions of restriction: 3

· 15.2 Chemical safety assessment:
  A Chemical Safety Assessment has not been carried out.

(Contd. on page 9)
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.
  H318 Causes serious eye damage.
  H319 Causes serious eye irritation.
  H326 Harmful if inhaled.
  H336 May cause drowsiness or dizziness.
  H411 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: Tom Cole, EHS Manager (tcole@kayakuAM.com)

- Revision History:
  The manufacturer's information in Section 1, the product hazard information in Section 2 and the component hazard information in Section 3 have been updated.

- Abbreviations and acronyms:
  ADR: Accord relatif au transport international 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)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Flam. Liq. 3: Flammable liquids – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3