

Printing date 09/18/2019

Reviewed on 09/18/2019

1 Identification

- **Product identifier**
- **Trade name:** SU-8 Developer
- **Product number:** Y020100
- **CAS Number:**
108-65-6
- **Application of the substance / the mixture** Photoresist remover
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Kayaku Advanced Materials
200 Flanders Road
Westborough, MA 01581
Tel: (617) 965-5511
Fax: (617) 965-5818
- **Information department:**
Product Safety
Email: productsafety@kayakuAM.com
- **Emergency telephone number:**
Kayaku Advanced Materials : 617-965-5511
Chemtrec USA Emergency : 800-424-9300
Chemtrec International Emergency : 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

Repr. 1B H360 May damage fertility or the unborn child.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** *Danger*

(Contd. on page 2)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 1)

· Hazard-determining components of labeling:

1-Methoxy-2-propanol acetate

2-Methoxy-1-propyl acetate

· Hazard statements

H226 Flammable liquid and vapor.

H360 May damage fertility or the unborn child.

H336 May cause drowsiness or dizziness.

· Precautionary statements

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

P261 Avoid breathing dust/fume/gas/mist/vapors/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 person to fresh air and keep 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 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.

P403+P235 Store in a well-ventilated place. Keep cool.

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

· Classification system:
· NFPA ratings (scale 0 - 4)


Health = 1

Fire = 2

Reactivity = 0

· HMIS-ratings (scale 0 - 4)


Health = 1

Fire = 2

Reactivity = 0

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

· vPvB: Not applicable.

3 Composition/information on ingredients
· Chemical characterization: Substances
· CAS No. Description

108-65-6 1-Methoxy-2-propanol acetate

· Identification number(s)

· EC number: 203-603-9

· Index number: 607-195-00-7

(Contd. on page 3)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 2)

· Dangerous components:		
70657-70-4	2-Methoxy-1-propyl acetate ⚠ Flam. Liq. 3, H226; ⚠ Repr. 1B, H360; ⚠ STOT SE 3, H335	<0.5%
108-65-6	1-Methoxy-2-propanol acetate ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	>99.5%

4 First-aid measures

· **Description of first aid measures**

· **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 unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

Alcohol resistant foam

Fire-extinguishing powder

ABC powder

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

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

· **Advice for firefighters**

· **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 product to reach sewage system or any drains.

Inform respective authorities in case of seepage into water course or sewage system.

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

· **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 Section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

(Contd. on page 4)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 3)

- **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.
 Open and handle container with care.
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
 Keep ignition sources away - Do not smoke.
 Protect against electrostatic charges.
 Keep respirator available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:**
 Do not store together with alkalis (caustic solutions).
 Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**
 Keep container well-sealed in cool, dry location.
 Store receptacle in a well ventilated area.
 Protect from heat and direct sunlight.
- **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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
 The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
 At this time, the remaining constituent has no known exposure limits.

108-65-6 1-Methoxy-2-propanol acetate	
WEEL	50 ppm

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

- **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.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.
- **Respiratory equipment:**
 In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.

(Contd. on page 5)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 4)

· 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** Contact glove manufacture for break-through time.

· Eye protection:


Tightly sealed goggles

9 Physical and chemical properties
· Information on basic physical and chemical properties
· General Information
· Appearance:

Form: Fluid

Color: Colorless

 · **Odor:** Ethereal

 · **Odor threshold:** Not determined.

 · **pH-value at 20 °C (6820 °F):** 4

· Change in condition

Melting point/Melting range: < -67 °C (152.6 < -67 °F)

Boiling point/Boiling range: 146 °C (294.8 146 °F)

 · **Flash point:** 44 °C (111.2 44 °F)

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

 · **Ignition temperature:** 315 °C (599 315 °F)

 · **Decomposition temperature:** Not determined.

 · **Auto igniting:** Not determined.

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

· Explosion limits:

Lower: 1.5 Vol %

Upper: 10.8 Vol %

 · **Vapor pressure at 20 °C (6820 °F):** 3.7 hPa (2.8 3.7 mm Hg)

 · **Density at 20 °C (6820 °F):** 0.9668 g/cm³ (8.06795 0.9668 lbs/gal)

 · **Relative density** Not determined.

 · **Vapor density** Not determined.

 · **Evaporation rate** 1.6-2.3 (BuAc=1)

· Solubility in / Miscibility with

Water at 20 °C (6820 °F): 220 g/l

(Contd. on page 6)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 5)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
 - Organic solvents:** 99.5 %
 - VOC content:** 99.5 %
- **Solids content:** 0.5 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**
 - Heat, flames and sparks. Extremes of temperature and direct sunlight.
 - Contact with incompatible materials.
- **Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

108-65-6 1-Methoxy-2-propanol acetate

Oral	LD50	8532 mg/kg (Rat)
Dermal	LD50	>5000 mg/kg (Rat)
Inhalative	LC50/6 h	4345 ppm (Rat)

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

- **Carcinogenic categories**

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

None of the ingredients are listed.

- **NTP (National Toxicology Program)**

None of the ingredients are listed.

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

None of the ingredients are listed.

(Contd. on page 7)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 6)

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

108-65-6 1-Methoxy-2-propanol acetate

LC50 408-500 mg/l (daphnia magna)

100-180 mg/l (rainbow trout (*Oncorhynchus mykiss*))

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water

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

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Disposal must be made in accordance with Federal, State, and Local regulations.

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**

NA3272

· **ADR, IMDG, IATA**

UN3272

· **UN proper shipping name**

· **DOT, IMDG, IATA**

ESTERS, N.O.S. (1-Methoxy-2-propanol acetate)

· **ADR**

3272 ESTERS, N.O.S. (1-Methoxy-2-propanol acetate)

· **Transport hazard class(es)**

· **DOT**



· **Class**

3 Flammable liquids


(Contd. on page 8)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 7)

· 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):	30
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN3272, ESTERS, N.O.S. (1-Methoxy-2-propanol acetate), 3, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· Section 355 (extremely hazardous substances):

None of the ingredients are 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 are listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients are listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

(Contd. on page 9)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 8)

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

None of the ingredients are listed.

 · **California SCAQMD Rule 443.1 VOC's:** No information available.

· GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms


GHS02 GHS07 GHS08

· Signal word Danger
· Hazard-determining components of labeling:

1-Methoxy-2-propanol acetate

2-Methoxy-1-propyl acetate

· Hazard statements

H226 Flammable liquid and vapor.

H360 May damage fertility or the unborn child.

H336 May cause drowsiness or dizziness.

· Precautionary statements

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

P261 Avoid breathing dust/fume/gas/mist/vapors/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 person to fresh air and keep 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 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.

P403+P235 Store in a well-ventilated place. Keep cool.

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

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

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 SDS:** Product safety department

 · **Contact:** Tom Cole, EHS Manager (tcole@kayakuAM)

· 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.

 · **Date of preparation / last revision** 09/18/2019 / 1

(Contd. on page 10)

Printing date 09/18/2019

Reviewed on 09/18/2019

Trade name: SU-8 Developer

(Contd. of page 9)

Abbreviations and acronyms:

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
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

US