

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

· 1.1 Product identifier

· Trade name: XP MicroSpray Positive Photoresist Spray

· Article number: MSP0013

· 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:

Kayaku Advanced Materials

200 Flanders Road

Westborough, MA 01581

Tel: (617) 965-5511

Fax: (617) 965-5818

The person responsible in EU Member State:

ONLY REPRESENTATIVE

Andrée (Fanny) Kirsch - De Mesmaeker

President

REACH NATION SPRL

Avenue du Pesage, 18/9

B-1050 Brussels, Belgium

e-mail: fc813546@skynet.be

*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

· 1.4 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

Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.



GHS07

Skin Irrit. 2 H315

Causes skin irritation.

Eye Irrit. 2 H319

Causes serious eye irritation.

STOT SE 3 H336

May cause drowsiness or dizziness.

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· 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

· Signal word Danger

· Hazard-determining components of labelling:

1-Methoxy-2-propanol acetate

· Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

· Precautionary statements

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P260 Do not breathe 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 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.

· 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: 108-65-6 EINECS: 203-603-9 Index number: 607-195-00-7	1-Methoxy-2-propanol acetate (Registration No.: 01-2119475791-29-0050)  Flam. Liq. 3, H226;  STOT SE 3, H336	40-60%
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	Mixed Cresol Novolac Resin	10-25%
	⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315	
CAS: 115-10-6 EINECS: 204-065-8 Index number: 603-019-00-8	dimethyl ether	10-25%
	⚠ Flam. Gas 1, H220; Press. Gas C, H280	
CAS: 1319-77-3 EINECS: 215-293-2 Index number: 604-004-00-9	Cresol (mix)	<1%
	⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; ⚠ Skin Corr. 1B, H314	

Additional Components:

Diazo Photoactive Compound	5-15%
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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
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: Seek immediate medical advice.

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

ABC powder

For safety reasons unsuitable extinguishing agents: Water with full jet

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.

Keep away from ignition sources.

Ensure adequate ventilation

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

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- **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**
 Open and handle receptacle with care.
 Keep away from heat and direct sunlight.
 Ensure good ventilation/exhaust at the workplace.
- **Information about fire - and explosion protection:**
 Keep ignition sources away - Do not smoke.
 Protect against electrostatic charges.
 Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.
 Do not spray onto a naked flame or any incandescent material.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:**
 Store in a cool location.
 Observe official regulations on storing packagings with pressurised containers.
- **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.

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:**

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

IOELV	Short-term value: 550 mg/m ³ , 100 ppm
	Long-term value: 275 mg/m ³ , 50 ppm
	Skin

115-10-6 dimethyl ether

IOELV	Long-term value: 1920 mg/m ³ , 1000 ppm
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1319-77-3 Cresol (mix)

IOELV	Long-term value: 22 mg/m ³ , 5 ppm
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- **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

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- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves** 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:	Aerosol
Colour:	Amber coloured
Odour:	Characteristic
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	-24 °C

· **Flash point:** -42 °C

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

· **Ignition temperature:** 235 °C

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not selfigniting.

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

· Explosion limits:

Lower:	1.5 Vol %
Upper:	18.6 Vol %

· **Vapour pressure at 20 °C:** 5200 hPa

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

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- | | |
|--|--|
| · Evaporation rate | Not applicable. |
| · 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 | No further relevant information available. |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Possible formation of peroxide.
Used empty containers may contain product gases which form explosive mixtures with air.
- **10.4 Conditions to avoid**
Contact with incompatible materials.
Heat, flames and sparks. Extremes of temperature and direct sunlight.
- **10.5 Incompatible materials:**
Strong Oxidizing Agents, Strong Bases, Strong Acids, Strong Reducing Agents, Iron, Hydrazine
- **10.6 Hazardous decomposition products:**
Nitrogen oxides
Irritant gases/vapours
Aldehyde
Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation**
May cause skin irritation
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, 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.

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

SECTION 14: Transport information

- | | |
|---|---------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1950 |
| · 14.2 UN proper shipping name | |
| · ADR, IMDG | AEROSOLS |
| · IATA | AEROSOLS, flammable |
| · 14.3 Transport hazard class(es) | |
| · ADR | |
|  | |
| · Class | 2 5F Gases. |
| · Label | 2.1 |

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· IMDG, IATA


· Class	2.1
· Label	2.1

· 14.4 Packing group

· ADR, IMDG, IATA	Void
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· 14.5 Environmental hazards:

· Marine pollutant:	No
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· 14.6 Special precautions for user

· Danger code (Kemler):	Warning: Gases.
· EMS Number:	-
· Stowage Code	F-D,S-U
	SW1 Protected from sources of heat.
	SW22 For AEROSOLS with a maximum capacity of 1 litre:
	Category A. For AEROSOLS with a capacity above 1 litre:
	Category B. For WASTE AEROSOLS: Category C, Clear of
	living quarters.
· Segregation Code	SG69 For AEROSOLS with a maximum capacity of 1 litre:
	Segregation as for class 9. Stow "separated from" class 1
	except for division 1.4.
	For AEROSOLS with a capacity above 1 litre:
	Segregation as for the appropriate subdivision of class 2.
	For WASTE AEROSOLS:
	Segregation as for the appropriate subdivision of class 2.

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

· Transport/Additional information:
· ADR

· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0
	Not permitted as Excepted Quantity
· Transport category	2
· Tunnel restriction code	D

· IMDG

· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E0
	Not permitted as Excepted Quantity

· UN "Model Regulation":

UN 1950 AEROSOLS, 2.1

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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

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· **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**

H220 Extremely flammable gas.
 H226 Flammable liquid and vapour.
 H280 Contains gas under pressure; may explode if heated.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H336 May cause drowsiness or dizziness.

· **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)

· **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:**

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)
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Gas 1: Flammable gases – Category 1
 Aerosol 1: Aerosols – Category 1
 Press. Gas C: Gases under pressure – Compressed gas
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 3: Acute toxicity – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3