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

Printing date 13.10.2021 *Version number 4* *Revision: 13.10.2021*

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:**
Manufacturer:
Kayaku Advanced Materials
200 Flanders Road
Westborough, MA 01581
Telephone: (617) 965-5511
Fax: (617) 965-5818

Importer:
A-Gas Electronic Materials
Unit 3, IO Centre
Swift Valley
Rugby, Warwickshire
CV21 1TW, UK
Tel: +44-0-1788-537535
Fax: +44-0-1788-535835
Website: www.agasem.com
Email: customerservice.em@agas.com

· **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**

flame

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

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 alcohol resistant foam to extinguish.
P370+P378 In case of fire: Use fire-extinguishing powder to extinguish.
P370+P378 In case of fire: Use carbon dioxide to extinguish.
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.*

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· **Dangerous components:**		
CAS: 108-65-6 EINECS: 203-603-9	1-Methoxy-2-propanol acetate Flam. Liq. 3, H226; STOT SE 3, H336	55-80%
CAS: 115-10-6 EINECS: 204-065-8	dimethyl ether Flam. Gas 1, H220; Press. Gas (Comp.), H280	10-25%
CAS: 1319-77-3 EINECS: 215-293-2	Cresol (mix) Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Corr. 1B, H314	<1%

· **Additional Components:**		
Mixed Cresol Novolac Resin	Acute Tox. 4, H302; Skin Irrit. 2, H315	10-25%
Diazo Photoactive Compound		5-10%

· **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.

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· ***6.3 Methods and material for containment and cleaning up:***
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***
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

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

· ***Ingredients with limit values that require monitoring at the workplace:***	
108-65-6 1-Methoxy-2-propanol acetate	
WEL	*Short-term value: 548 mg/m³, 100 ppm* *Long-term value: 274 mg/m³, 50 ppm* *Sk*
115-10-6 dimethyl ether	
WEL	*Short-term value: 958 mg/m³, 500 ppm* *Long-term value: 766 mg/m³, 400 ppm*

· ***Additional information:*** *The lists valid during the making were used as basis.*

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· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
· **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 %

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· **Vapour pressure at 20 °C:**	5200 hPa
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **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**
· **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.
· **Additional toxicological information:**
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

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· ***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.

· ***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***	*1950 AEROSOLS*
· ***IMDG***	*AEROSOLS*
· ***IATA***	*AEROSOLS, flammable*
· ***14.3 Transport hazard class(es)***	
· ***ADR***	

· ***Class***	*2 5F Gases.*

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· **Label**	2.1
· **IMDG, IATA**	
	
· **Class**	2.1
· **Label**	2.1
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	Void
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Warning: Gases.
· **Hazard identification number (Kemler code):**	-
· **EMS Number:**	F-D,S-U
· **Stowage Code**	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":**	UN1950, AEROSOLS, 2.1

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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**
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.

· **Department issuing SDS:** *Product safety department*
· **Contact:** *Tom Cole, EHS Manager (tcole@kayakuAM.com)*
· **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 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. Gas 1: Flammable gases – Category 1
Aerosol 1: Aerosols – Category 1
Press. Gas (Comp.): Gases under pressure – Compressed gas
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
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