

SECTION 1: Identification of the substance/mixture and of the company/undertaking· **1.1 Product identifier**· **Trade name:** EBR PG· **Article number:** G042075· **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** Solvents· **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 1,3-dioxolane (CAS 646-06-0) 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

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

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

(Contd. on page 2)

Trade name: EBR PG

(Contd. of page 1)



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

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

GHS07

GHS08

Signal word Danger

Hazard-determining components of labelling:

1,3-dioxolane

1-methoxy-2-propanol

Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

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 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+P233 Store in a well-ventilated place. Keep container tightly closed.

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

Additional information:

Restricted to professional users.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

(Contd. on page 3)

Printing date 16.08.2019

Version number 4

Revision: 16.08.2019

Trade name: EBR PG

· **vPvB:** Not applicable.

(Contd. of page 2)

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· **Description:** Solvent mixture

· **Dangerous components:**

CAS: 646-06-0 EINECS: 211-463-5 Index number: 605-017-00-2	1,3-dioxolane (Registration No.: 01-2119490744-29-0017) ⚠ Flam. Liq. 2, H225; ⚠ Repr. 1B, H360; ⚠ Eye Irrit. 2, H319	50-80%
CAS: 107-98-2 EINECS: 203-539-1 Index number: 603-064-00-3	1-methoxy-2-propanol ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	5-30%

· **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.

If skin irritation continues, consult a doctor.

· **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:** 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

ABC powder

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

· **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Formaldehyde

Can form explosive gas-air mixtures.

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.

(Contd. on page 4)

Trade name: EBR PG

(Contd. of page 3)

- **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**
 - Ensure adequate ventilation
 - Keep away from ignition sources.
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
 - Dilute with plenty of water.
 - 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).
 - Ensure adequate ventilation.
- **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**
 - Keep away from heat and direct sunlight.
 - Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
 - Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
 - Keep ignition sources away - Do not smoke.
 - Protect from heat.
 - 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:**
 - Store in inert atmosphere or keep well sealed to prevent the formation of peroxides and other oxidation products.
 - 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:**
 - Keep container tightly sealed.
 - Store in cool, dry conditions in well sealed containers.
 - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** Positive radiation resist edge bead remover

SECTION 8: Exposure controls/personal protection

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

(Contd. on page 5)

Trade name: EBR PG

(Contd. of page 4)

· 8.1 Control parameters
· Ingredients with limit values that require monitoring at the workplace:
107-98-2 1-methoxy-2-propanol

IOELV	Short-term value: 568 mg/m ³ , 150 ppm
	Long-term value: 375 mg/m ³ , 100 ppm
	Skin

· 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.

Do not inhale gases / fumes / aerosols.

· Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation.

· Protection of hands:

Selection of glove material on consideration of the penetration times, rates of diffusion and degradation



Protective gloves

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

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

Butyl rubber, BR

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: According to product specification

· Odour: Characteristic

· Odour threshold: Not determined.

· pH-value: Not determined.

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 16.08.2019

Version number 4

Revision: 16.08.2019

Trade name: EBR PG

(Contd. of page 5)

· Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	74-120 °C
· Flash point:	<7.5 °C
· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	270 °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:	2.1 Vol %
Upper:	20.5 Vol %
	Not determined.
· Vapour pressure at 20 °C:	133 hPa
· Density at 20 °C:	1.0355 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· 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**
 Polymerisation.
 Possible formation of peroxide.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **10.6 Hazardous decomposition products:**
 Formaldehyde
 Carbon monoxide and carbon dioxide

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(Contd. on page 7)

Trade name: EBR PG

(Contd. of page 6)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

646-06-0 1,3-dioxolane

Oral	LD50	3000 mg/kg (Rat)
Dermal	LD50	8480 mg/kg (rabbit)
Inhalative	LC50	68.4 mg/L (Rat)

107-98-2 1-methoxy-2-propanol

Oral	LD50	5660 mg/kg (Rat)
Dermal	LD50	13000 mg/kg (rabbit)
Inhalative	LC50/4 h	54.6 mg/l (Rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Experience with humans:** No further relevant information available.
- **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**
May damage fertility or the unborn child.
- **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:**

646-06-0 1,3-dioxolane

Oral	14 day NOEC	>1000 mg/l (algae)
	EC50	7650 mg/kg (daphnia magna)
	LC50 48 hr	12000 mg/L (Sheepshead minnow)

107-98-2 1-methoxy-2-propanol

	EC50 96 hr	23300 (daphnia magna)
		>1000 (green algae)
	LC50/96 h	20800 mg/l (Pimephales promelas)

- **12.2 Persistence and degradability** The single components are biodegradable
- **12.3 Bioaccumulative potential**
Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 16.08.2019

Version number 4

Revision: 16.08.2019

Trade name: EBR PG


(Contd. of page 7)

- **12.4 Mobility in soil**
Component: Propylene glycol monomethyl ether, rapid dissipation in soil expected. Koc value between 1 and 50 indicating very high soil mobility.
- **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.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· 14.1 UN-Number	
· ADR, IMDG, IATA	UN1166
· 14.2 UN proper shipping name	
· ADR	1166 DIOXOLANE
· IMDG, IATA	DIOXOLANE
· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group	
· ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	33
· EMS Number:	F-E,S-D

(Contd. on page 9)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 16.08.2019

Version number 4

Revision: 16.08.2019

Trade name: EBR PG

(Contd. of page 8)

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|--|--------------------------|
| · 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 |
| · Transport category | 2 |
| · Tunnel restriction code | D/E |
| · UN "Model Regulation": | UN1166, DIOXOLANE, 3, II |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- Directive 2012/18/EU
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5.000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 50.000 t
- 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.

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**
 H225 Highly flammable liquid and vapour.
 H226 Flammable liquid and vapour.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.
 H360 May damage fertility or the unborn child.
- **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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 10)

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

Printing date 16.08.2019

Version number 4

Revision: 16.08.2019

Trade name: EBR PG

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 1B: Reproductive toxicity – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. of page 9)

EU