

## Safety Data Sheet

acc. to OSHA HCS

Printing date 04/11/2023

Reviewed on 04/11/2023

### 1 Identification

- **Product identifier**
- **Trade name:** EBR PG
- **Product number:** G042075
- **Application of the substance / the mixture** Solvents
- **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
- **Information department:**  
 Product Safety  
 Email: [productsafety@kayakuam.com](mailto: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

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS05 Corrosion

Eye Damage 1

H318 Causes serious eye damage.



GHS07

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

- **Label elements**

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS05



GHS07

- **Signal word** *Danger*

- **Hazard-determining components of labeling:**

1,3-dioxolane

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1-methoxy-2-propanol

**· Hazard statements**

H225 Highly flammable liquid and vapor.

H318 Causes serious eye damage.

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 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.

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


Health = 2

Fire = 3

Reactivity = 1

**· HMIS-ratings (scale 0 - 4)**


Health = 2

Fire = 3

Reactivity = 1

**· Other hazards**
**· Results of PBT and vPvB assessment**

 · **PBT:** Not applicable.

 · **vPvB:** Not applicable.

### 3 Composition/information on ingredients

**· Chemical characterization: Mixtures**

 · **Description:** Solvent mixture

**· Dangerous components:**

646-06-0	1,3-dioxolane	50-80%
	⚠ Flammable Liquids 2, H225; ⚠ Eye Damage 1, H318	
107-98-2	1-methoxy-2-propanol	5-30%
	⚠ Flammable Liquids 3, H226; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H336	

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**4 First-aid measures**

- **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:**  
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**  
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.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

**6 Accidental release measures**

- **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.
- **Environmental precautions:**  
Dilute with plenty of water.  
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).

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Ensure adequate ventilation.

**· 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.

**· Protective Action Criteria for Chemicals**
**· PAC-1:**

646-06-0	1,3-dioxolane	60 ppm
107-98-2	1-methoxy-2-propanol	100 ppm

**· PAC-2:**

646-06-0	1,3-dioxolane	190 ppm
107-98-2	1-methoxy-2-propanol	160 ppm

**· PAC-3:**

646-06-0	1,3-dioxolane	1,000 ppm
107-98-2	1-methoxy-2-propanol	660 ppm

### 7 Handling and storage

**· Handling:**
**· 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 protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Use explosion-proof apparatus / fittings and spark-proof tools.

Protect against electrostatic charges.

**· 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 oxidizing and acidic materials.

**· Further information about storage conditions:**

Keep container tightly sealed.

Keep container well-sealed in cool, dry location.

Protect from heat and direct sunlight.

**· Specific end use(s) Positive radiation resist edge bead remover**

### 8 Exposure controls/personal protection

**· Additional information about design of technical systems:** No further data; see section 7.

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### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

**646-06-0 1,3-dioxolane**

 TLV 61 mg/m<sup>3</sup>, 20 ppm

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

 REL Short-term value: 540 mg/m<sup>3</sup>, 150 ppm

 Long-term value: 360 mg/m<sup>3</sup>, 100 ppm

 TLV Short-term value: (553) NIC-369 mg/m<sup>3</sup>, (150) NIC-100 ppm

 Long-term value: (369) NIC-184 mg/m<sup>3</sup>, (100) NIC-50 ppm

NIC-A4

 · **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.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

 · **Respiratory equipment:** 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.

Contact glove manufacturer for break-through time.

#### · Material of gloves

Butyl rubber, BR

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:**

Liquid

**Color:**

Clear to light yellow

#### · Odor:

Characteristic

#### · Odor threshold:

Not determined.

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· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	75 °C (167 °F)
· <b>Flash point:</b>	<7.5 °C (<45.5 °F)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Auto igniting:</b>	270 °C (518 °F)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Ignition temperature:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	2.1 Vol %
<b>Upper:</b>	20.5 Vol %
	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	133 hPa (99.8 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.0355 g/cm <sup>3</sup> (8.64125 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	50-80 %
<b>VOC content:</b>	50-80 %
· <b>Other information</b>	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**
  - Polymerization.
  - Possible formation of peroxide.
- **Conditions to avoid**
  - Contact with incompatible materials.
  - Heat, flames and sparks. Extremes of temperature and direct sunlight.

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- **Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **Hazardous decomposition products:**  
 Formaldehyde  
 Carbon monoxide and carbon dioxide

### 11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are 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:**

- **on the skin:**

Irritant to skin and mucous membranes.

Not a known skin irritant

No irritant effect.

- **on the eye:** Strong irritant with the danger of severe eye injury.

- **Sensitization:**

No sensitizing effects known.

No information

- **Experience with humans:** No further relevant information available.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

- **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.

- **Germ cell mutagenicity** No information

- **Carcinogenicity** No information

- **Specific target organ toxicity - repeated exposure** No information

- **Aspiration hazard** No information

US

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### 12 Ecological information

· **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)

· **Persistence and degradability** The single components are biodegradable

· **Behavior in environmental systems:**

· **Bioaccumulative potential**

Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.

· **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 (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.

· **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:**

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

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

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1166

· **UN proper shipping name**

· **DOT, IMDG, IATA**

DIOXOLANE

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 · **ADR** 1166 DIOXOLANE

 · **Transport hazard class(es)**

 · **DOT**

 · **Class** 3 Flammable liquids  
 · **Label** 3

 · **ADR, IMDG, IATA**

 · **Class** 3 Flammable liquids  
 · **Label** 3

 · **Packing group**

 · **DOT, ADR, IMDG, IATA** II

 · **Environmental hazards:**

 · **Marine pollutant:** No

 · **Special precautions for user** Warning: Flammable liquids

 · **Hazard identification number (Kemler code):** 33

 · **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":** UN1166, DIOXOLANE, 3, II

### 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.

 · **Hazardous Air Pollutants**

None of the ingredients are listed.

 · **Proposition 65**

 · **Chemicals known to cause cancer:**

None of the ingredients are listed.

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**· 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)**

None of the ingredients are listed.

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

None of the ingredients are listed.

**· Massachusetts State Right To Know List**

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

**· New Jersey State Right To Know List**

646-06-0 | 1,3-dioxolane

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

**· Pennsylvania Hazardous Substances List**

646-06-0 | 1,3-dioxolane

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

**· California SCAQMD Rule 443.1 VOC's: No information available.**
**· GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**· Hazard pictograms**


GHS02    GHS05    GHS07

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

1,3-dioxolane

1-methoxy-2-propanol

**· Hazard statements**

H225 Highly flammable liquid and vapor.

H318 Causes serious eye damage.

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.

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- 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 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.*

· **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.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.*

- **Date of preparation / last revision** 04/11/2023

· **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

DOT: US Department of Transportation

IATA: International Air Transport Association

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

Flammable Liquids 2: Flammable liquids – Category 2

Flammable Liquids 3: Flammable liquids – Category 3

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3