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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name: Polyethylene glycol derivatives, **4-Arm PEG-Aldehyde**, MW 2k/5k/10k/20k

Product Number: PSB-4301, PSB-4302, PSB-4303, PSB-4304

Brand: Creative PEGWorks

CAS No.: Unknown for the specific derivative product; polyethylene glycol has a CAS No.: 25322-68-3

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Laboratory research chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company: Creative PEGWorks

Address: PO BOX 16863, Chapel Hill, NC 27516 USA

Phone: (+1) 919-748-3734

Fax: (+1) 919-287-2759

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

**2.2 GHS Label elements, including precautionary statements**

Not a hazardous substance or mixture. No data available on precautionary statements

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS – none**

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**3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances****Synonyms: PEG derivatives**

Polyethylene Glycol (CAS No.: 25322-68-3) is the major material used to produce its derivatives.

Component	Classification	Concentration
<b>Polyethylene glycol derivatives</b>		
		<=100%

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**4. FIRST AID MEASURES****4.1 Description of first aid measures****If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In case of skin contact**

Wash off with soap and plenty of water. Remove contaminated clothing.

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**In case of eye contact**

Flush eyes with water as a precaution.

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**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water.

**4.2 Most important symptoms and effects, both acute and delayed**

No data available. The most important known symptoms and effects may be described in the labeling (see section 2.2) and/or in section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

No data available

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing vapors, mist or gas.

For personal protection see section 8.

**6.2 Environmental precautions**

No special environmental precautions required.

**6.3 Methods and materials for containment and cleaning up**

Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a cool place.

Storage class: Non Combustible Solids or Semi-solids.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

No data available for polyethylene glycol derivatives

Note: A TWA limit of 10.00 mg/m<sup>3</sup> for polyethylene glycol (CAS# 25322-68-3) based on USA Workplace Environmental Exposure Levels (WEEL). In compliance with OSHA, a PEL of 5.00 mg/m<sup>3</sup> for respirable dust.

### 8.2 Exposure controls

#### Appropriate engineering controls

General industrial hygiene practice

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: No data available

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: No data available

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

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No special environmental precautions required.

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## 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: powder or semi-solid Color: white or off-white
b) Odor	No data available
c) Odor Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	1.1-1.3 g/mL at 25 °C (77 °F)
n) Water solubility	> 1.0 mg/mL
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

**Note:** Low molecular weight PEG derivatives ( $\leq 1k$  for linear PEG or  $\leq 2k$  for multi-branched PEG) may appear as gel-like or viscous liquid. PEG derivatives are soluble in DMSO, DMF, chloroform, and dichloromethane.

### 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions

Contains the following stabilizer(s) or inhibitor(s):

For polyethylene glycol derivatives containing acrylate or maleimide functional groups, MEHQ ( $\geq 100$  -  $\leq 500$  ppm) inhibitor may be present.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

**10.5 Incompatible materials**

Strong acids, Strong bases, Strong oxidizing agents

**10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

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**11. TOXICOLOGICAL INFORMATION****NO DATA AVAILABLE FOR THIS POLYETHYLENE GLYCOL DERIVATIVE PRODUCT.**

The following information is for polyethylene glycol (CAS# 25322-68-3).

**Information on toxicological effects****Acute toxicity**

LD50 Oral: Rat > 15,000 mg/kg

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: Mild skin irritation - 24 h

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Mild eye irritation - 24 h

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****NO DATA AVAILABLE FOR THIS POLYETHYLENE GLYCOL DERIVATIVE PRODUCT.**

The following information is for polyethylene glycol (CAS# 25322-68-3).

**DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

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**15. REGULATORY INFORMATION****SARA 302 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

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**16. OTHER INFORMATION****NO DATA AVAILABLE FOR THIS POLYETHYLENE GLYCOL DERIVATIVE PRODUCT.**

The following information is for polyethylene glycol (CAS# 25322-68-3).

**HMIS Rating**

Health hazard: 0

Chronic Health Hazard:

Flammability: 1

Physical Hazard 0

**NFPA Rating**

Health hazard: 0

Fire Hazard: 1

Reactivity Hazard: 0

**Further information**

**Disclaimer:** Creative PEGWorks provides the information contained herein in good faith but makes no representation or warranty as to the comprehensiveness or accuracy of any information, or of the suitability for any purpose of any material. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of product. Recipients must exercise their independent judgment in determining its appropriateness for a particular purpose and are responsible for making sure their use is safe and lawful and does not infringe on the rights of any third parties. Creative PEGWorks and its affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.creativepegworks.com](http://www.creativepegworks.com) for additional terms and conditions of sale.

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**Preparation Information**

Creative PEGWorks

+1-919-748-3734

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