SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: DPGDA
Synonyms: None
Product Description: dipropylene glycol diacrylate
Molecular Formula: Not available
Molecular Weight: Not available
Intended/Recommended Use: Radiation curable coating ingredient, Coatings & Inks
Uses advised against: None

2. HAZARDS IDENTIFICATION

GHS Classification
- Skin Corrosion / Irritation Hazard Category 2
- Serious Eye Damage / Eye Irritation Hazard Category 1
- Skin Sensitizer Hazard Category 1B

LABEL ELEMENTS
Signal Word
DANGER

Hazard Statements
Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction

Precautionary Statements
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
IF ON SKIN: Wash with plenty of soap and water.
Specific treatment (see supplemental first aid instructions on this label).
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>%</th>
<th>GHS Classification</th>
<th>Carcinogen</th>
</tr>
</thead>
</table>
| oxybis(methyl-2,1-ethanediyl) diacrylate 57472-68-1 | > 99 | Skin Irrit. 2 (H315)  
Eye Dam. 1 (H318)  
Skin Sens. 1B (H317) | - |

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

4. FIRST AID MEASURES

First-aid Measures

**Inhalation:**
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

**Skin Contact:**
Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

**Eye Contact:**
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.
Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects, Acute and Delayed
None known

Immediate Medical Attention and Special Treatment
Not applicable

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Notes To Physician:
No specific measures have been identified.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Use water spray or fog, carbon dioxide or dry chemical.

Unsuitable Extinguishing Media:
full water jet, high pressure water jet.

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See SDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:
Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

Environmental Precautions:
None known

References to other sections:
See Sections 7, 8 and 13 for additional information.

7. HANDLING AND STORAGE

HANDLING

Precautions: Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves and eye/face protection.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary).
Avoid excessive heat, contamination or exposure to direct sunlight to prevent polymerization.

**STORAGE**

Store under air. The stabilizer is only effective in the presence of oxygen. Keep container in a cool, well-ventilated area. Keep away from heat sources and direct sunlight.

- **Storage Temperature:** Store at 4 - 40 °C
- **Reason:** Safety.

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures:**

Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

**Respiratory Protection:**

For operations where inhalation exposure can occur use an approved respirator. Recommendations are listed below. Other protective respiratory equipment may be used based on user's own risk assessment. Recommended respirators include those certified by NIOSH.

- **Recommended:**
  Full Face Mask with organic vapor cartridge, Type A filter (BP >65°C)

**Eye Protection:**

Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

**Skin Protection:**

Prevent contamination of skin or clothing when removing protective equipment. Barrier creams may be used in conjunction with the gloves to provide additional skin protection. Wear impermeable gloves and suitable protective clothing.

**Hand Protection:**

Wear protective gloves. Recommendations are listed below. Other protective materials may be used based on user's own risk assessment. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility etc.) is noticed.

- **Gloves for short term exposure/splash protection - non exhaustive list:**
  - Laminated multilayer gloves, break through time: > 60 min
  - Nitrile rubber (NBR), thickness: > 0.56 mm, break through time: < 60 min

  The chemical resistance depends on the type of product and amount of product on the glove. Therefore gloves need to be changed when in contact with chemicals.

- **Not suitable gloves - non exhaustive list:**
  - Latex gloves

  Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protective glove in practice may be much shorter than the permeation time determined through testing. Use PE gloves as under gloves for difficult situations like for instance: high exposure, unknown composition or unknown properties of the chemicals.

**Additional Advice:**

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

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**Exposure Limit(s)**
No values have been established.

**Biological Exposure Limit(s)**

No values have been established.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>clear pale yellow</td>
</tr>
<tr>
<td>Appearance</td>
<td>clear liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>ester-like</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>256.3 °C 493.3 °F</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-34.3 °C -29.7 °F</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>&lt; 1.33 hPa @ 20 °C</td>
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<tr>
<td>Specific Gravity/Density</td>
<td>1.06 g/cm³</td>
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<tr>
<td>Vapor Density</td>
<td>Not available</td>
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<tr>
<td>Percent Volatile (% by wt.)</td>
<td>&lt; 0.5 %</td>
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<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Saturation In Air (% by Vol.)</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
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</tr>
<tr>
<td>Solubility In Water</td>
<td>&gt; 3 - &lt;4 g/L @ room temperature</td>
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<tr>
<td>Volatile Organic Content</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>146 °C 295 °F Cleveland Open Cup</td>
</tr>
<tr>
<td>Flammable Limits (% by Vol.)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>240 °C 464 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>2.28 @ 30 °C Method EC A8, HPLC</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity (Kinematic)</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity (Dynamic)</td>
<td>5 - 15 mPa.s @ 25 °C Non viscous liquid</td>
</tr>
</tbody>
</table>

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**10. STABILITY AND REACTIVITY**

**Reactivity:**
No information available

**Stability:**
Stable

**Conditions To Avoid:**
The explosive and oxidizing properties of this product have been predicted negative based on chemical structure, following the guidance outlined in Method A14 (Explosive Properties) and Method A21 (Oxidative Properties (liquids)) of Commission Regulation (EC) No 440/2008. Avoid exposure to strong UV sources. Avoid friction with temperature increase as result. Avoid temperature higher than 40°C. Avoid direct contact with heat sources. Protect from direct sunlight.

**Polymerization:**
May occur

**Conditions To Avoid:**
Material should not be heated above 100°C due to polymerization.

**Materials To Avoid:**
Avoid free radical producing initiators. Avoid contact with peroxides. Avoid contact with reactive metals. Avoid contact with strong alkali's. Unintentional contact with them should be avoided. They give an exothermic reaction with the product.
11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral.

Acute toxicity - oral: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Acute toxicity - dermal: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Acute toxicity - inhalation: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Skin corrosion / irritation: Causes skin irritation

Serious eye damage / eye irritation: Causes serious eye damage

Respiratory sensitization: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Skin sensitization: May cause an allergic skin reaction

Carcinogenicity: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Germ cell mutagenicity: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Reproductive toxicity: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

Specific target organ toxicity (STOT) - single exposure: Not Classified. - Based on available data and/or professional judgment, the classification criteria are not met.

Specific target organ toxicity (STOT) - repeated exposure: Not Classified. - Based on available data and/or professional judgment, the classification criteria are not met.

Aspiration hazard: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

<table>
<thead>
<tr>
<th>Route</th>
<th>Species</th>
<th>LD50/LC50</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>rat</td>
<td>3530</td>
<td>mg/kg</td>
</tr>
<tr>
<td>dermal</td>
<td>rabbit</td>
<td>&gt; 2000</td>
<td>mg/kg</td>
</tr>
<tr>
<td>inhalation</td>
<td>rat</td>
<td>4</td>
<td>hr</td>
</tr>
</tbody>
</table>

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation - dermal: Irritating
Acute Irritation - eye: Causes serious damage

ALLERGIC SENSITIZATION

Sensitization - Skin: Sensitizing
Sensitization - respiratory: No data
GENOTOXICITY

Assays for Gene Mutations
Ames Salmonella Assay No data

OTHER INFORMATION
The toxicity data above are the results from Allnex sponsored studies or from the available public literature. Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms such as redness, blistering, dermatitis, etc. The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

HAZARDOUS INGREDIENT TOXICITY DATA

Oxybis(methyl-2,1-ethanediyl) diacrylate has acute oral (rat) and dermal (rabbit) LD50 values of 3530 mg/kg and >2,000 mg/kg, respectively. Direct contact with this material may cause moderate skin irritation and severe eye irritation/eye burns. Repeated or prolonged skin contact may cause skin sensitization.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause birth defects or other reproductive harm.

12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

This material is not classified as dangerous for the environment. This material is readily biodegradable. Material is not expected to significantly bioaccumulate based on Log Kow value of <3.

ECOTOXICITY

ALGAE TEST RESULTS

Test: Growth Inhibition (OECD 201)
Duration: 72 hr
Species: Algae
10 - 100 mg/l EC50

FISH TEST RESULTS

Test: Acute toxicity, freshwater (OECD 203)
Duration: 96 hr. Procedure: Static.
1 - 10 mg/l LC50

INVERTEBRATE TEST RESULTS

Test: Acute Immobilization (OECD 202)
Duration: 48 hr Procedure: Static
Species: Water Flea (Daphnia magna)
10 - 100 mg/l EC50

PERSISTENCE AND DEGRADABILITY

Duration: 28 day Procedure: Ready biodegradability
> 70 % Readily Biodegradable Biodegradation in activated domestic sewage: 90-100% after 28 days.
RESULTS OF PBT AND vPvB ASSESSMENT
This product does not meet the criteria for PBT (Persistent, Bioaccumulative and Toxic substance) or for vPvB (Very Persistent and Very Bioaccumulative).

HAZARDOUS INGREDIENT TOXICITY DATA

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Toxicity to Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)</td>
<td>LC50 1-10 mg/l (96h)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Toxicity to Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)</td>
<td>EC50 10-100 mg/l - Water Flea (Daphnia magna) (48h)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Toxicity to Algae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)</td>
<td>EC50 10-100 mg/l (72h)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybis(methyl-2,1-ethanediyl) diacrylate (57472-68-1)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this SDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this SDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? Not applicable/Not regulated
TRANSPORT CANADA
Dangerous Goods?  Not applicable/Not regulated

ICAO / IATA
Dangerous Goods?  Not applicable/Not regulated

IMO
Dangerous Goods?  Not applicable/Not regulated

SPECIAL PRECAUTIONS FOR USER
Protect against external heat sources above +40°C/104°F.

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Economic Area (including EU): When purchased from an Allnex legal entity based in the EEA (EU or Norway), this product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: One or more components of this product are NOT included on the Philippine (PICCS) inventory.

Taiwan: All components of this product are included in the Taiwan chemical substance inventory or are not required to be listed on the Taiwan chemical substance inventory (TCSI).

Switzerland: All components of this product are exempt from the new substance notification requirements for Switzerland (SR 813.11 art. 24-26).

OTHER ENVIRONMENTAL INFORMATION
The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA.
PRODUCT HAZARD CATEGORY UNDER SECTIONS 311 AND 312 OF EPCRA

Physical Hazards
Not applicable

Health Hazards
Skin Corrosion or Irritation
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)
Health: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 1 - Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures.

Reasons For Issue: Revised Section 15

Date Prepared: 01/08/2018
Date of last significant revision: 03/23/2015

Component - Hazard Statements
oxybis(methyl-2,1-ethanediyl) diacrylate
  H315 - Causes skin irritation.
  H317 - May cause an allergic skin reaction.
  H318 - Causes serious eye damage.

Prepared By: Product Stewardship & Regulatory Affairs Department, http://www.allnex.com/contact

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