

**MICRO • CHEM**  
**SAFETY DATA SHEET**

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Rev. Date: 18 December 2008

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION** -----

PRODUCT USE:           Organic Solvent Mixture  
TRADE NAME:           EBR PG  
                              Positive Radiation Resist Edge Bead Remover  
PRODUCT #:             G042075  
  
SUPPLIER:               MicroChem Corporation  
                              90 Oak Street, PO Box 426  
                              Newton, MA 02464-0002  
  
TELEPHONE:           (617) 965-5511  
FAX:                   (617) 965-5818  
CHEMTREC USA  
EMERGENCY #:         (800) 424-9300  
CHEMTREC INTL  
EMERGENCY #:         (703) 527-3887  
MSDS DATE:            18 December 2008

**SECTION 2. HAZARDS IDENTIFICATION** -----

**Hazardous Classification**

Flammable liquids - Category 2  
Serious eye damage/eye irritation - Category 2A  
Skin corrosion/irritation - Category 2  
Target organ systemic toxicant single exp - Category 3  
Target organ systemic toxicant repeat exp - Category 2



Signal Word: **DANGER!**

**Hazards**

Highly flammable liquid and vapour.  
Causes serious eye irritation.  
Causes skin irritation.  
May cause damage to organs through prolonged or repeated exposure.  
May cause drowsiness and dizziness.  
May cause respiratory irritation.

**Precautions**

Use only outdoors or in a well-ventilated area.  
Do not breathe mist or vapors.  
Keep away from heat, sparks and open flame. - No smoking.  
Use explosion-proof equipment.  
Wear protective gloves and eye/face protection.  
Take precautionary measures against static discharge.  
If skin irritation occurs, get medical advice/attention.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

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IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Take off contaminated clothing and wash before re-use.  
Call a POISON CENTRE or doctor/physician if you feel unwell.  
Use extinguishing measures that are appropriate to local circumstances

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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INGREDIENTS: 1,3-Dioxolane (CAS: 646-06-0); 70-80%.  
Propylene glycol monomethyl ether (107-98-2); 20-30%

## SECTION 4. FIRST AID MEASURES

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INHALATION: If inhaled, remove to fresh air. If patient has stopped breathing, give artificial respiration. If breathing is difficult give oxygen. Consult a physician.  
INGESTION: Drink plenty of water if conscious. Do not induce vomiting. Consult a physician.  
SKIN CONTACT: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.  
EYE CONTACT: Rinse immediately with water, flush for 15 min. lifting eyelids frequently. Consult a physician.

## SECTION 5. FIRE-FIGHTING MEASURES

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EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or alcohol foam.  
SPECIAL FIRE FIGHTING PRECAUTIONS: Wear self-contained breathing apparatus (SCBA) and full personal protective equipment to prevent contact with skin and eyes.  
UNUSUAL FIRE OR EXPLOSION HAZARDS: Extremely flammable. Vapors are heavier than air and may spread along floors to source of ignition and flash back. Formaldehyde may form when burned or in contact with strong acids.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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EVACUATION PROCEDURES & SAFETY: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. Eliminate all sources of ignition. Do not breathe vapors or dust.  
CLEANUP & DISPOSAL OF SPILL: Absorb with an inert absorbent. Sweep up and place in an appropriate closed container. Use clean, non-sparking tools to collect absorbed material.

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ENVIRONMENTAL &  
REGULATORY REPORTING: Do not flush to drain. If required proper authorities should be notified

## SECTION 7. HANDLING AND STORAGE-----

PRECAUTIONS: Store container tightly in well-ventilated place.

STORAGE: Store in inert atmosphere or keep well sealed to prevent the development of peroxides and other oxidation products.

HANDLING: Highly flammable. Keep away from heat, sparks, and flames. Take precautions against static discharge. Do not breathe vapors or spray mist. Use with adequate ventilation. Do not contact with skin, eyes, and clothing. Avoid prolonged or repeated exposure. Wear heavy rubber (butyl or neoprene) gloves. Wash with soap and water after handling. Have safety shower and eye wash available.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION-----

OCCUPATIONAL EXPOSURE LIMITS: Propylene glycol monomethyl ether: ACGIH TLV 100 ppm 8hr TWA, STEL 150 ppm.  
1,3-Dioxolane: ACGIH TLV 20 ppm 8hr TWA.

RESPIRATORY PROTECTION: Use NIOSH approved respirator when ventilation is inadequate.

VENTILATION: Local or general mechanical ventilation is required.

SKIN PROTECTION: Lightweight protective clothing. Chemical resistant apron. Solvent-resistant gloves (butyl or neoprene).

EYE PROTECTION: Tightly fitting safety goggles are highly recommended.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES-----

APPEARANCE: Colorless to pale yellow liquid

ODOR: Ethereal

BOILING POINT: 74-120 °C (168-248 °F)

SPECIFIC GRAVITY: 1.030

VAPOR PRESSURE: 70 mm @ 20 °C (68 °F)

VAPOR DENSITY: 2.6 (air=1)

H<sub>2</sub>O SOLUBILITY: 100% @ 20 °C, by wt.

% VOLATILES: 100% by wt

EVAPORATION RATE: 3.5 (BuAc=1)

FLASH POINT: -6 °C (21 °F) COC

AUTOIGNITION TEMP: 274 °C (525 °F)

EXPLOSION LIMITS: 2.1 lower (vol%)  
20.5 upper (vol%)

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#### SECTION 10. STABILITY AND REACTIVITY

STABILITY: If exposed to air, organic peroxides will develop.  
INCOMPATIBILITY: Strong Oxidizing Agents, Strong Acids  
HAZARDOUS POLYMERIZATION: Can occur.  
HAZARDOUS COMBUSTION OR  
DECOMPOSITION PRODUCTS: Formaldehyde may form when burned or in contact  
with strong acids.

#### SECTION 11. TOXICOLOGICAL INFORMATION

**Routes of Entry:** Inhalation, ingestion, eye and skin contact

**Symptoms of Exposure:** Causes severe eye irritation. Causes skin irritation. May cause upper respiratory tract irritation, central nervous system depression, shortness of breath, drowsiness and confusion. Prolonged, repeated exposure to high concentrations can cause adverse effects to liver, kidney and lungs. Chronic exposure may cause headache, tiredness, confusion, tremors, memory loss, slurred speech and anorexia.

##### **Acute Toxicity**

###### **Acute Oral Toxicity**

Component: 1,3-Dioxolane  
LD50 rat 3000 mg/kg  
Component: Propylene glycol monomethyl ether  
LD50 rat 6100 mg/kg

###### **Acute Dermal Toxicity**

Component: 1,3-Dioxolane  
LD50 rabbit 8480 mg/kg  
Component: Propylene glycol monomethyl ether  
LD50 rat 13,000 mg/kg

###### **Acute Inhalation Toxicity**

Component: 1,3-Dioxolane  
LC50 rat 68.4 mg/l  
Component: Propylene glycol monomethyl ether  
LC50 rat 54.6 mg/l 4 hr

##### **Specific Concentration Limits**

The values listed below represent the percentages of ingredients of unknown toxicity:

0% Acute oral toxicity  
0% Acute dermal toxicity  
0% Acute inhalation toxicity

##### **Skin corrosion/irritation**

Component: 1,3-Dioxolane  
Acute Skin Irritation: Causes skin irritation.

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Component: Propylene glycol monomethyl ether  
Acute Skin Irritation: this substance is a mild skin irritant

#### **Serious eye damage/eye irritation**

Component: 1,3-Dioxolane  
Acute Eye Irritation: Severely irritating to eyes.  
Component: Propylene glycol monomethyl ether  
Acute Eye Irritation: Liquid is not irritating to eye. Mild eye irritation reported with vapor.

#### **Respiratory or Skin Sensitisation**

Component: Propylene glycol monomethyl ether  
Skin sensitization - Did not induce skin sensitization

#### **Carcinogenicity**

Component: 1,3-Dioxolane  
Not considered carcinogenic by NTP, IARC, ACGIH or OSHA.  
Component: Propylene glycol monomethyl ether  
Studies in laboratory animals indicate that this substance is not carcinogenic.

#### **Germ Cell Mutagenicity**

Component: 1,3-Dioxolane  
Ames Test – negative with and without metabolic activation  
Component: Propylene glycol monomethyl ether  
No evidence of genotoxicity in standard bacterial and mammalian test systems in vitro.

#### **Specific Target Organ Systemic Toxicity (single exposure)**

Component: 1,3-Dioxolane  
Central Nervous system  
Component: Propylene glycol monomethyl ether  
Central Nervous System

#### **Specific Target Organ Systemic Toxicity (repeated exposure)**

Component: 1,3-Dioxolane  
Central Nervous System, Liver, Kidney, Lung  
Component: Propylene glycol monomethyl ether  
Central Nervous System, Liver, Kidney

#### **Toxicity to Reproduction**

Component: 1,3-Dioxolane  
No adverse effects to reproduction or adverse developmental effects known.  
Component: Propylene glycol monomethyl ether  
This substance is not expected to cause adverse reproductive effects at dose levels that are not also toxic to the parent.

#### **Aspiration Hazards**

No data found.

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## SECTION 12. ECOLOGICAL INFORMATION

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### Acute aquatic toxicity

#### Acute toxicity to fish

Component: 1,3-Dioxolane  
48 hr LC50 Sheepshead minnow: 12,000 mg/L  
Component: Propylene glycol monomethyl ether  
96-h LC50 (Pimephales promelas): 20,800 mg/L

#### Acute toxicity to aquatic invertebrates

Component: 1,3-Dioxolane  
EC50 Daphnia magna: 7650 mg/L  
Component: Propylene glycol monomethyl ether  
96-h EC50 Daphnia magna: 23,300 mg/L

#### Acute toxicity to algae

Component: 1,3-Dioxolane  
14 day NOEC Algae 1000 mg/l  
Component: Propylene glycol monomethyl ether  
96 hr EC50 green algae >1,000 mg/l

### Specific concentration limits

The values listed below represent the percentages of ingredients of unknown toxicity.

0% Acute aquatic toxicity – fish  
0% Acute aquatic toxicity – aquatic invertebrates  
0% Acute aquatic toxicity - algae

### Chronic aquatic toxicity

#### Chronic toxicity to fish

No data found

#### Chronic toxicity to aquatic invertebrates

No data found

#### Chronic toxicity to algae

No data found

### Persistence/Degradability

Component: Propylene glycol monomethyl ether  
Biodegradable under aerobic or anaerobic conditions. Aerobic biodegradation of 96% after 28 days. Anaerobic biodegradation of 38% after 81 days (30 day lag period).

### Bioaccumulation

Component: Propylene glycol monomethyl ether  
Not expected to bioaccumulate in aquatic organisms. Log Kow (calculated):  
-0.437

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**Mobility**

Component: Propylene glycol monomethyl ether  
Rapid dissipation in soil expected. Koc value between 1 and 50 indicating very high soil mobility.

**SECTION 13. DISPOSAL CONSIDERATIONS**

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**Precautions**

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Dispose of contents/container in accordance with local regulation.

**Disposal**

Comply with applicable local, state or international regulations regarding the proper disposal of this material and/or containers. Dispose of contents/container in accordance with local regulations.

**SECTION 14. TRANSPORTATION INFORMATION**

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HAZARD CLASSIFICATION: Flammable Liquid  
SHIPPING NAME: Dioxolane Solution  
UN NUMBER: UN 1166  
PACKING GROUP II

**SECTION 15. REGULATORY INFORMATION**

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**US AND INTERNATIONAL INFORMATION**

Chemical Inventories: TSCA (US) – Listed.  
EINECS/ELINCS/NLP (EU) – Listed.  
China – Listed.  
Japan – Listed.  
DSL/NDSL (Canada) – Listed.  
AICS (Australia) – Listed.  
Korea – Listed.  
Philippines – Listed.

SARA Title III: This product IS NOT subject to SARA Title III, Section 313 Reporting Requirements.

Calif. SCAQMD Rule 443.1 VOC's: 1030 g/L

**SECTION 16. OTHER INFORMATION**

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National Fire Protection Association Hazard Ratings – NFPA:

- 2 Health Hazard Rating
- 3 Flammability Rating
- 1 Reactivity Rating

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For additional information contact: **productsafety@microchem.com**

To the best of our knowledge, the above information is believed to be accurate but does not claim to be all-inclusive and is intended to be used only as a guide. The supplier makes no warranty of any kind, expressed or implied, concerning the use of this product and shall not be held liable for any damage resulting from handling or from contact with the above product. User assumes all risks incident to its use.

MSDS Revision Information: NEW