

# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) and Canadian  
Workplace Hazardous Material Information System (WHMIS 2015)

Revision date 02-Jul-2024

Revision Number 1

## 1. Identification

### Product identifier

<b>Product Catalog Number:</b> 40-4240-XX	<b>Product Description:</b> 3% DCA in Toluene
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<b>Product Code(s)</b> 40-4240-XX	<b>Product Name</b> Deblocking Mix
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### Other means of identification

**UN number or ID number** UN2924

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** For research use only

**Restrictions on use** Not for human diagnostic use

### Details of the supplier of the safety data sheet

#### Manufacturer Address

Glen Research LLC  
22825 Davis Drive  
Sterling, VA 20164 USA

#### Emergency telephone number

**Company Phone Number** 1-703-437-6191

**Emergency Telephone** CHEMTREC Customer Number (CCN): 234802 Glen Research Corporation  
US: 1-800-424-9300 or Local: +1-703-527-3887  
EMEA: +44 20 3885 0382  
APAC: +65 3163 8374

**Website** www.glenresearch.com

**E-mail address** support@glenresearch.com

## 2. Hazard(s) identification

### Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration hazard	Category 1

Flammable liquids

Category 2

**Appearance** Clear Liquid**Physical state** Liquid**Odor** No information available**Label elements****Signal word**

Danger

**Hazard statements**

Causes skin irritation

Causes serious eye damage

May cause cancer

Suspected of damaging fertility or the unborn child

May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure

May be fatal if swallowed and enters airways

**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves, protective clothing, eye protection and face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not breathe dust, fume, gas, mist, vapors and spray

Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

**Eyes**

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

**Skin**

IF ON SKIN: Wash with plenty of water and soap

If skin irritation occurs: Get medical advice and attention

Take off contaminated clothing and wash it before reuse

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

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

**Precautionary Statements - Disposal**

Dispose of contents and container to an approved waste disposal plant

**Other information**

May be harmful if swallowed. Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

### 3. Composition/information on ingredients

#### Substance

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Toluene	108-88-3	93-97	-	-
Dichloroacetic acid	79-43-6	3-7	-	-

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

#### Description of first aid measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention. Delayed pulmonary edema may occur.
<b>Eye contact</b>	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required.

#### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.
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#### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.
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### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
<b>Specific hazards arising from the chemical</b>	No information available.
<b>Hazardous combustion products</b>	Hydrogen chloride. Carbon oxides. Chlorine gas.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for cleaning up</b>	Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal.

## 7. Handling and storage

### Precautions for safe handling

<b>Advice on safe handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Ensure adequate ventilation. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Store away from other materials.
<b>Packaging materials</b>	Glass.

## 8. Exposure controls/personal protection

### Control parameters Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	
Toluene 108-88-3	TWA: 20 ppm Ototoxicant - potential to cause hearing disorders	TWA: 200 ppm (vacated) TWA: 100 ppm (vacated) TWA: 375 mg/m <sup>3</sup> (vacated) STEL: 150 ppm (vacated) STEL: 560 mg/m <sup>3</sup> Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>	
Dichloroacetic acid 79-43-6	TWA: 0.5 ppm Sk*	-	-	
Chemical name	Alberta	British Columbia	Ontario	Quebec
Toluene 108-88-3	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> Sk*	TWA: 20 ppm Adverse reproductive effect	TWA: 20 ppm	TWA: 20 ppm
Dichloroacetic acid 79-43-6	TWA: 0.5 ppm TWA: 2.6 mg/m <sup>3</sup> Sk*	TWA: 0.5 ppm Sk* Adverse reproductive effect	TWA: 0.5 ppm Sk*	-

**Biological occupational exposure limits**

Chemical name	ACGIH
Toluene 108-88-3	0.02 mg/L - blood (Toluene) - prior to last shift of workweek 0.03 mg/L - urine (Toluene) - end of shift 0.3 mg/g creatinine - urine (o-Cresol with hydrolysis) - end of shift

**Appropriate engineering controls**

**Engineering controls**                      Showers  
 Eyewash stations  
 Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**                      Tight sealing safety goggles.

**Hand protection**                              Contact glove manufacturer for recommendations. Wear suitable gloves. Impervious gloves.

**Skin and body protection**                      Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection**                      No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls**              Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

**General hygiene considerations**              Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

**9. Physical and chemical properties****Information on basic physical and chemical properties**

**Physical state**                                      Liquid  
**Appearance**                                      Clear Liquid  
**Color**    Clear

**Odor** No information available  
**Odor threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Initial boiling point and boiling range</b>	No data available	None known
<b>Flash point</b>	No data available	None known
<b>Evaporation rate</b>	No data available	None known
<b>Flammability</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Relative vapor density</b>	No data available	None known
<b>Relative density</b>	0.89g/mL	None known
<b>Water solubility</b>	Immiscible in water	None known
<b>Solubility in other solvents</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b><u>Other information</u></b>		
<b>Explosive properties</b>	No information available	
<b>Oxidizing properties</b>	No information available	
<b>Softening point</b>	No information available	
<b>Molecular weight</b>	No information available	
<b>VOC content</b>	No information available	
<b>Liquid Density</b>	No information available	
<b>Bulk density</b>	No information available	

## 10. Stability and reactivity

**Reactivity** No information available

**Chemical stability** Stable under normal conditions.

**Possibility of hazardous reactions** If overheated, the product may release flammable vapors that can form explosive gas mixtures.

**Hazardous polymerization** Hazardous polymerization does not occur.

**Conditions to avoid** Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous decomposition products** Hydrogen chloride. Carbon oxides. Chlorine gas.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

**Inhalation** Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness.

<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Repeated exposure may cause skin dryness or cracking. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Symptoms</b>	Redness. Burning. May cause blindness. Difficulty in breathing. Coughing and/ or wheezing. Dizziness. May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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### Acute toxicity

#### **Numerical measures of toxicity**

No information available

#### **The following values are calculated based on chapter 3.1 of the GHS document**

<b>ATEmix (oral)</b>	2,606.10 mg/kg
<b>ATEmix (dermal)</b>	7,160.40 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 ppm
<b>ATEmix (inhalation-dust/mist)</b>	12.90 mg/l
<b>ATEmix (inhalation-vapor)</b>	99,999.00 mg/l

### **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Toluene 108-88-3	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h
Dichloroacetic acid 79-43-6	= 2820 mg/kg ( Rat )	= 510 mg/kg ( Rabbit )	-

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Causes burns. Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Toluene 108-88-3	-	Group 3	-	-
Dichloroacetic acid	A3	Group 2B	Reasonably Anticipated	X

79-43-6				
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**Legend****ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

**Occupational Safety and Health Administration of the US Department of Labor**

X - Present

<b>Reproductive toxicity</b>	Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.
<b>STOT - single exposure</b>	May cause drowsiness or dizziness.
<b>STOT - repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure.
<b>Target organ effects</b>	No information available.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.

**12. Ecological information**

**Ecotoxicity** Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Toluene 108-88-3	EC50: >433mg/L (96h, Pseudokirchneriella subcapitata) EC50: =12.5mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 15.22 - 19.05mg/L (96h, Pimephales promelas) LC50: =12.6mg/L (96h, Pimephales promelas) LC50: 5.89 - 7.81mg/L (96h, Oncorhynchus mykiss) LC50: 14.1 - 17.16mg/L (96h, Oncorhynchus mykiss) LC50: =5.8mg/L (96h, Oncorhynchus mykiss) LC50: 11.0 - 15.0mg/L (96h, Lepomis macrochirus) LC50: =54mg/L (96h, Oryzias latipes) LC50: =28.2mg/L (96h, Poecilia reticulata) LC50: 50.87 - 70.34mg/L (96h, Poecilia reticulata)	-	EC50: 5.46 - 9.83mg/L (48h, Daphnia magna) EC50: =11.5mg/L (48h, Daphnia magna)

**Persistence and degradability** Not Likely.

**Bioaccumulation** Not likely to bioaccumulate.



**Bioconcentration factor (BCF)** log Pow <= 4

#### Component Information

Chemical name	Partition coefficient
Toluene 108-88-3	2.73

**Mobility in soil** Not expected to adsorb on soil.

**Mobility** Soluble in water.

**Other adverse effects** No information available.

### 13. Disposal considerations

#### Disposal methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Dispose of in accordance with federal, state and local regulations. Do not reuse empty containers.

**California waste information** This product contains one or more substances that are listed with the State of California as a hazardous waste.

### 14. Transport information

**DOT**  
**UN number or ID number** Regulated  
 UN2924  
**Proper shipping name** Flammable liquid, corrosive, n.o.s.  
**Transport hazard class(es)** Class 3, (8)  
**Packing group** Packing Group II  
**Reportable quantity - lbs** 1000 lbs

**IATA**  
**UN number or ID number** Regulated  
 UN2924  
**UN proper shipping name** Flammable liquid, corrosive, n.o.s.  
**Transport hazard class(es)** Class 3, (8)  
**Packing group** Packing Group II

**IMDG**  
**UN number or ID number** Regulated  
 UN2924  
**UN proper shipping name** Flammable liquid, corrosive, n.o.s.  
**Transport hazard class(es)** Class 3, (8)  
**Packing group** Packing Group II  
**EmS-No.** F-E, S-C

### 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**International Inventories**

<b>TSCA</b>	All of the components of this product are listed in the TSCA Inventory or exempt.
<b>DSL/NDSL</b>	Listed or exempt.
<b>EINECS/ELINCS</b>	Listed or exempt.
<b>ENCS</b>	Listed or exempt.
<b>IECSC</b>	Listed or exempt.
<b>KECI</b>	Listed or exempt.
<b>PICCS</b>	Listed or exempt.
<b>AIIC</b>	Listed or exempt.

**Legend:****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AIIC** - Australian Inventory of Industrial Chemicals**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Toluene - 108-88-3	1.0

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Toluene 108-88-3	1000 lb	X	X	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Toluene 108-88-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:.

Chemical name	California Proposition 65
Toluene - 108-88-3	Developmental
Dichloroacetic acid - 79-43-6	Carcinogen Developmental Male Reproductive

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Toluene 108-88-3	X	X	X
Dichloroacetic acid 79-43-6	X	-	-

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. Other information**

<b>NFPA</b>	<b>Health hazards</b> 3	<b>Flammability</b> 3	<b>Instability</b> 0	<b>Special hazards</b> -
<b>HMIS</b>	<b>Health hazards</b> 3	<b>Flammability</b> 3	<b>Physical hazards</b> 0	<b>Personal protection</b> X

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation

Revision date 02-Jul-2024

Revision Note No information available

**Disclaimer**

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**End of Safety Data Sheet**