

**MATERIAL SAFETY DATA SHEET****Trade Name: DCA Deblock****Section I - Chemical Products & Company Identification**

Proligo LLC	Proligo Biochemie GmbH	Creation Date: 2/99
6200 Lookout Rd	Georg-Heyken-Str. 14	Revision Date: 3/04
Boulder, Colorado 80301 USA	Hamburg, Germany D21147	Revision Number: 2

Product #: L020251, L023001

For emergency source information (USA) contact: Chemtrec 1-800-424-9300 24 Hours

For emergency source information (International) contact: Chemtrec 001-703-527-3887 (USA) 24 Hours

Trade Names/Synonyms: Deblock SolutionChemical Family: Mixture**Section 2 - Composition/Information On Ingredients - % by Weight**

<u>Chemicals:</u>	<u>Composition (w/w) %:</u>	<u>CAS Number:</u>	<u>Classification:</u>	<u>Odor Threshold:</u>
<b>Dichloromethane</b>	50-100%	75-09-02	Carcinogen Cat. 3 Xn; R:40	300 ppm
<b>Dichloroacetic acid</b>	0-5%	79-43-6	C; R:35	Not Available

**Section 3 - Hazards Identification**NFPA (National Fire Protection Association) Ratings (Scale 0-4): **Health: 2**      **Flammable: 1**      **Reactivity: 0**

**Emergency Overview:** Do not breathe fumes. Irritating to the eyes and skin, may be irritating to the respiratory system. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. May cause cancer based on animal data. Dichloromethane is converted to carbon monoxide in the body. Use prudent laboratory practices for handling chemical substances. **Possible risk of irreversible effects.**

**Potential Health Effects:**

<b>Skin Contact:</b>	Short Term Exposure:	Irritant, possible risk of irreversible effects.
	Long Term Exposure:	May cause defatting and dermatitis.
<b>Eye Contact:</b>	Short Term Exposure:	Irritant, possible risk of irreversible effects.
	Long Term Exposure:	Possible eye burns.
<b>Ingestion:</b>	Short Term Exposure:	Irritant, possible risk of irreversible effects.
	Long Term Exposure:	CNS depressions, excitement, headaches, dizziness, drowsiness, nausea, collapse, unconsciousness, coma and possible death due to respiratory failure. Possible cancer hazard based on animal studies. Possible risk of congenital malformation in the fetus.
<b>Inhalation:</b>	Short Term Exposure:	Irritant, possible risk of irreversible effects.
	Long Term Exposure:	CNS, headache, dizziness, unconsciousness and coma. Possible cancer hazard based on animal studies.
<b>Injection:</b>	Short Term Exposure:	No information available
	Long Term Exposure:	No information available

**CARCINOGEN/REPRODUCTIVE TOXIN STATUS:**

Dichloromethane

Dichloroacetic Acid

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<b>ACGIH:</b>	A2-Suspected human carcinogen	Not Listed
<b>NIOSH:</b>	Occupational carcinogen	Not Listed
<b>OSHA:</b>	Possible select carcinogen	Not Listed
<b>NTP:</b>	Reasonably anticipated to be a human carcinogen	Not Listed
<b>IARC:</b>	Group 2B, possible carcinogen	Group 3, human inadequate evidence

**According to 91/155 EC:**

Hazard designation:

Xn Harmful

Information pertaining to particular dangers for man and environment

R 35 Causes severe burns

R 36/38 Irritating to eyes and skin

R 40 Possible risk of irreversible effects

**\*Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies

**Section 4: First Aid Measures**

**Skin Contact:** Remove contaminated clothing. Flush affected area with water and then wash with soap or mild detergent and water. Observe for signs of irritation. If irritation is present, get medical attention.

**Eye Contact:** Wash eyes with large amounts of water or normal saline for at least 15 minutes. Observe for signs of irritation. If irritation is present, get medical attention.

**Ingestion:** Get medical attention.

**Inhalation:** Remove from exposure area to fresh air immediately. Get medical attention immediately.

**Injection:** If accidentally injected, get medical attention.

**Note to Physician:** There is no specific antidote. Treat symptomatically and supportively.

**Section 5: Fire Fighting Measures**

**FIRE AND EXPLOSION HAZARD:** **FlashPoint:** Not applicable for mixture. **Explosion Limits:** LL 15.1 at 103°C (217.4°F) and UL 17.3 at 148°C (298°F). **Autoignition Temperature:** 1033°F or 556.11°C.

**EXTINGUISHING MEDIA:** Use water spray, carbon dioxide or chemical foam, or dry chemical. Water may be effective for cooling, but may not effect extinguishment.

**SPECIFIC HAZARDS:** Vapors mixed with air in proper proportions will propagate a flame. Vapors mixed with air in proper proportions will propagate a flame.

**PROTECTION OF FIREFIGHTERS:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray to cool fire-exposed containers.

**Section 6: Accidental Release Measures**

**OCCUPATIONAL SPILL:** Wear appropriate protective clothing and chemically compatible gloves. Place spillage in appropriate container for waste disposal. Wash contaminated clothing before reuse.

**US CERCLA REPORTABLE QUANTITY (RQ):** 1000 lbs. for Dichloromethane (RCRA code: U080).

**Section 7 - Handling and Storage**

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Observe all federal, state and local regulations. Do not breathe vapor or ingest liquid. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container tightly closed. Loosen container closure cautiously before opening. Do not use around sources of heat, sparks, and flame. Keep from contact with oxidizing materials. Store in cool dry place. Use prudent laboratory practices for handling and storage of chemical substances.

**Section 8 - Exposure Controls/Personal Protection**

**Exposure Controls:** Wear appropriate respirator where no engineering controls exist. Use in laboratory hood or other ventilated device. Do NOT breathe vapor. Danger of peroxide formation. Use nonsparking tools. Use prudent laboratory practices for handling chemical substances.

**Eye Protection:** Employees must wear splash-proof safety goggles to prevent eye contact with this substance.

**Clothing:** Employee must wear appropriate protective clothing (laboratory coat with long sleeves) and equipment to prevent skin contact with this material.

**Gloves:** Employee must wear appropriate protective gloves to prevent contact with this material.

**Permissible Exposure Limits (USA):**

	<b>Dichloromethane</b>	<b>Dichloroacetic acid</b>
<u>ACGIH TWA (ppm)</u>	50	N/A
<u>ACGIH STEL/C (ppm)</u>	2000 (5 min every 3 hrs) / 1000 ppm	N/A
<u>IDHL (ppm)</u>	2300 (Occupational Carcinogen)	N/A
<u>OSHA (ppm)</u>	25	N/A
<u>NIOSH (ppm)</u>	Occupational Carcinogen	N/A

**Permissible Exposure Limits (Europe):**

	<b>Dichloromethane</b>	<b>Dichloroacetic acid</b>
<u>Germany (ppm)</u>	100	N/A
<u>USSR-UNEP/IRPTC (MAC)</u>	50 mg/m <sup>3</sup> (workplace air)	4 mg/m <sup>3</sup> (OEL)
<u>U. K. TWA (ppm)</u>	100	N/A
<u>U. K. STEL (ppm)</u>	N/A	N/A
<u>Japan (ppm)</u>	100	N/A

**According to 91/155 EC:**

Components with limit values that require monitoring at the workplace:

Dichloromethane (CAS # 75-09-2) 50-100%

OEL: Short-term value: 350 mg/m<sup>3</sup>, 100 ml/ m<sup>3</sup>

\*Additional information about design of technical systems:

No further data; see item 7

**Section 9 - Physical and Chemical Properties**

**DESCRIPTION:** Liquid, Colorless, with distinctive ethereal odor

**SOLUBILITY:** Miscible with water ( the mixture)

**FLASHPOINT:** Not available (for DCM) and 109°C (228°F)(for DCA)

**BOILING POINT:** 104°F (219°F)(for DCM) and 194°C (381°F)(for DCA)

**MELTING POINT:** Not Determined

**FREEZING POINT:** -95°C(-139°F) (for DCM) and Not available (for DCA)

**VAPOR PRESSURE:** 350 mm (for DCM) and 0.19 mm at 20°C (68°F) (for DCA)

**VAPOR DENSITY:** 2.9 (for DCM) and 4.5 (for DCA)

**pH:** pH 3-4 at 100 g/L (20°C, 68°F)

**Danger of Explosion:** Product is not explosive

**Self-inflammability:** Product is not selfigniting

**Solvent Content:** 0% Water

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<b>STABILITY:</b>	Stable
<b>REACTIVITY:</b>	Sensitive to heat.
<b>CONDITIONS TO AVOID:</b>	Contact with metals especially with powder form. Nitrogen oxide and metal salts. Avoid perchloric acid, nitric acid and metal oxides. Oxygen, amides, alcohols and aromatic hydrocarbons, water/KMNO <sub>4</sub> , acids, impurities and dust.
<b>INCOMPATIBILITIES:</b>	Strong oxidizers. Can react dangerously with nitrogen tetroxide, liquid oxygen, potassium, sodium, sodium-potassium alloys, lithium, potassium hydroxide with N-methyl-N-nitroso urea, potassium t-butoxide, and finely powdered aluminum and magnesium.
<b>DECOMPOSITION PRODUCTS:</b>	In case of fire: Hydrogen chloride (HCl), Phosgen
<b>POLYMERIZATION:</b>	Not available

**Section 11 - Toxicology Information**

<b>TOXICITY:</b>	The toxicological properties of this material have not been thoroughly investigated as a mixture. Listed below is the lethal dose and lethal concentration for the individual components of the mixture. <u>Dichloromethane</u> : LD <sub>50</sub> (Oral Rat)=1600 mg/kg LC <sub>50</sub> (Inhalation Rat)=52 g/m <sup>3</sup> <u>Dichloroacetic acid</u> : LD <sub>50</sub> (Oral Rat)=2820 mg/kg
<b>CARCINOGEN STATUS:</b>	Reasonably anticipated to be a human carcinogen. Confirmed carcinogen in animals.
<b>LOCAL EFFECTS:</b>	Harmful, Irritant
<b>ACUTE TOXICITY LEVEL:</b>	Harmful, Irritant.
<b>TARGET EFFECTS:</b>	CNS;anoxia
<b>AT INCREASED RISK FROM EXPOSURE:</b>	<u>Dichloromethane</u> (Teratogenicity): Specific development abnormalities (musculoskeletal/urogenital): inl-mus TCLo: 1250 ppm/tH

<b>Chemical Name:</b>	<b>RTECS Number:</b>
<b>Dichloromethane</b>	PA8050000
<b>Dichloroacetic acid</b>	AG6125000

**According to 91/155 EC:**

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

\*Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version;

Product is suspected to cause injury to fetus,

Product is suspected to cause cancer.

Irritant

Harmful

**Section 12 - Ecological Information**

<b>ENVIRONMENTAL IMPACT RATING (0-4):</b>	No data available.
<b>ACUTE AQUATIC TOXICITY:</b>	<u>Dichloromethane</u> : LC <sub>50</sub> 528 mg/L fish LC <sub>50</sub> 220 mg/L macrochirus
<b>DEGRADABILITY:</b>	Biological degradable after adaptation.
<b>LOG BIOCONCENTRATION FACTOR (BCF):</b>	No data available.

**Section 13 - Disposal Information**

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Observe all Federal, State, and Local Regulations.

**According to 91/155 EC:**

Product:

Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation: disposal must be made according to official regulations.

**Section 14 - Transportation Information**

Ship as regulated material. Transportation restrictions apply. The acute toxicity profile does warrant shipment as a hazardous material (DOT) or a dangerous good (IATA).

**UN2922****Hazard Class 8****Subsidiary Risk 6.1****Label Requirements: Corrosive liquid, Toxic, n.o.s. (Dichloroacetic Acid, Dichloromethane)****According to 91/155 EC:**

Land transport ADR/RID(cross-border)

- ADR/RID-GGVS/E Class: 8 Corrosive Material
- Number/Letter: 76c
- Kemler Number: 86
- UN-Number: 2922
- Label: 8+6.1
- Designation of goods: Corrosive liquid, Toxic n.o.s.,  
Dichloroacetic acid, Dichloromethane

Maritime transport IMDG:

- IMDG Class: 8
- Page: 8149
- UN Number: 2922
- Packaging group: III
- EMS Number: 8-15
- MFAG: 760
- Correct technical name: Corrosive liquid, Toxic n.o.s.,  
Dichloroacetic acid, Dichloromethane

Air transport ICAO-TI and IATA-DGR:

- ICAO/IATA Class: 8
- UN/ID Number: 2922
- Correct technical name: Corrosive liquid, Toxic n.o.s.,  
Dichloroacetic acid, Dichloromethane

**Section 15 - Regulatory Information**

	Dichloromethane	Dichloroacetic acid
<b>Europe:</b>		
EINECS/ELINCS:	200-838-9	201-207-0
EC INDEX NO.	602-004-00-3	607-066-00-5
<b>Canada:</b>		
NDSL/DSL:	DSL	DSL
<b>United States:</b>		
TSCA STATUS:	Yes	Yes
CERCLA SECTION 103 (40 CFR 302.4):	1000 lbs.	No

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SARA SECTION 302 (40 CFR 355.30):	No	No
SARA SECTION 304 (40 CFR 355.40):	No	No
SARA SECTION 313 (40 CFR 372.65):	Yes	No
OSHA PROCESS SAFETY (29 CFR 1910.119):	No	No
CALIFORNIA PROPOSITION 65	*	*
SARA ACUTE HAZARD (40 CFR 370.21)	Yes	Yes
CHRONIC HAZARD:	Yes	Yes
FIRE HAZARD:	Yes	No
REACTIVITY HAZARD:	No	No
SUDDEN RELEASE HAZARD:	No	No

\*WARNING: THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

**Classification:****Carcinogen Category 3; R 40 "Possible risk of irreversible effects"****Xi; R 36/38****Symbols: Xn (Harmful)****Risk Phrase: Mixture****R: 35****Causes severe burns****R: 36/38****Irritating to eyes and skin****R: 40****Possible risks of irreversible effects****Safety Phrases: Mixture****S: 23****Do not breath fumes/aerosol****S: 24/25****Avoid contact with skin and eyes****S: 26****In case of contact with eyes, rinse immediately with plenty of water and seek medical advice****S: 36/37****Wear suitable protective clothing and gloves****S: 45****In case of accident or if you feel unwell seek medical advice immediately (show label where possible).****For Laboratory R&D Use Only.****According to 91/155 EC:**

National Regulations

Classification according to VbF: A III

Technical instructions (air):

Class Share in %: I 50-100

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<b>Section 16 - Other</b>
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