

## MATERIAL SAFETY DATA SHEET

### SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	<b>Deblock Solution</b>
Chemical Name /Combination	5% Dichloroacetic Acid in Toluene
Catalog:	<b>DN-3302-F,</b>
Synonyms:	5% DCA in Toluene, Deblock T, Deblocking Solution, DMT Removal Solution, DCA/ Toluene Solution
Recommended use:	Laboratory Use only
Manufacturer or supplier's	ChemGenes India Pvt. Ltd 207, Regency Plaza, 5-Park Road Lucknow-226 001,U.P, India, Ph: +91 86874 21036, Email: info@chemgenesindia.com

### SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
Flammable liquids (Category 2), H225  
Corrosive to Metals (Category 1), H290  
Skin corrosion (Sub-category 1A), H314  
Serious eye damage (Category 1), H318  
Carcinogenicity (Category 2), H351  
Reproductive toxicity (Category 1B), H360FD  
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336  
Specific target organ toxicity - repeated exposure (Category 2), Central nervous system, H373  
Aspiration hazard (Category 1), H304  
Short-term (acute) aquatic hazard (Category 1), H400  
Long-term (chronic) aquatic hazard (Category 3), H412  
For the full text of the H-Statements mentioned in this Section, see Section 16.
- 2.2 Label elements  
Labelling according Regulation (EC) No 1272/2008

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## Pictogram



Signal word Danger

## Hazard statement(s)

- H225 Highly flammable liquid and vapor.  
H290 May be corrosive to metals.  
H304 May be fatal if swallowed and enters airways.  
H314 Causes severe skin burns and eye damage.  
H336 May cause drowsiness or dizziness.  
H351 Suspected of causing cancer.  
H360FD May damage fertility. May damage the unborn child.  
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

## Precautionary statement(s)

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## Supplemental Hazard information (EU)

EUH071 Corrosive to the respiratory tract.

**Reduced Labeling (<= 125 ml)**

## Pictogram



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Signal word Danger Hazard statement(s)  
H351 Suspected of causing cancer.  
H304 May be fatal if swallowed and enters airways.  
H314 Causes severe skin burns and eye damage.  
H360FD May damage fertility. May damage the unborn child.

Precautionary statement(s)

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)

EUH071 Corrosive to the respiratory tract.

**2.3 Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

3.2 Mixtures

Component	Concentration	Classification
<b>Dichloroacetic Acid</b> CAS-No. 79-43-6 EC-No. 201-207-0	5%	Met. Corr. 1; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; Carc. 2; Repr. 1B; STOT RE 2; Aquatic Acute 1; H290, H311, H314, H318, H351, H360FD, H373, H400 M-Factor - Aquatic Acute:10
<b>Toluene</b> CAS-No. 108-88-3 EC-No. 203-625-9	95%	Flam. Liq. 2; Skin Irrit. 2; Repr. 2; STOT SE 3; STOT RE 2; Asp. Tox. 1; Aquatic Chronic 3; H225, H315, H361d, H336, H373, H304, H412 Concentration limits: 20 %: STOT SE 3, H336;

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: FIRST AID MEASURES**

## 4.1 Description of first-aid measures

## General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

## If inhaled

After inhalation: fresh air. Call in physician.

## In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

## In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

## If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralize.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

**SECTION 5: FIREFIGHTING MEASURES**

## 5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Dry powder Foam

## Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

## 5.2 Special hazards arising from the substance or mixture

Combustible.

Fire may cause evolution of:

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Hydrogen chloride gas

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Flash point 4°C

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities Storage conditions  
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

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

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

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). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Viton®

Minimum layer thickness: 0,70 mm Break through time: > 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Viton®

Minimum layer thickness: 0,70 mm Break through time: > 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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#### Body Protection

Flame retardant antistatic protective clothing.

#### Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Color: clear
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	111°C -112°C at 1.013hpa
g)	Flash point	4°C
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Density	0.890g/cm <sup>3</sup> at 20°C
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
9.2	Other safety information	No data available

### SECTION 10: STABILITY AND REACTIVITY

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#### 10.1 Reactivity

Vapors may form explosive mixture with air.

#### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### 10.3 Possibility of hazardous reactions

No data available

#### 10.4 Conditions to avoid

Warming.

#### 10.5 Incompatible materials

Metals

#### 10.6 Hazardous decomposition products

In the event of fire: see section 5

### **SECTION 11: TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

Mixture

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: Possible symptoms:, mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

Acute toxicity estimate Dermal - > 2.000 mg/kg (Calculation method)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Mixture causes serious eye damage. Risk of blindness!

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

May harm the unborn child.



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May impair fertility.

Specific target organ toxicity - single exposure  
Mixture may cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure  
Mixture may cause damage to organs through prolonged or repeated exposure. - Central nervous system  
Aspiration hazard  
Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

#### 11.2 Additional Information

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

#### Components

##### **Toluene**

##### Acute toxicity

LD50 Oral - Rat - male - 5.580 mg/kg (Tested according to Directive 92/69/EEC.)

LC50 Inhalation - Rat - male and female - 4 h - 25,7 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rabbit - > 5.000 mg/kg Remarks: (ECHA)

##### Skin corrosion/irritation

Skin - Rabbit

Result: irritating - 4 h

Remarks: (ECHA)

##### Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation (OECD Test Guideline 405)

##### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(Regulation (EC) No. 440/2008, Annex, B.6)

##### Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test

Result: negative

Test Type: Ames test

Test system: S. typhimurium Result: negative

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Species: Rat - Bone marrow Result: negative  
Remarks: (ECHA)

Carcinogenicity  
No data available

Reproductive toxicity  
Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure  
May cause drowsiness or dizziness. - Central nervous system

Specific target organ toxicity - repeated exposure  
May cause damage to organs through prolonged or repeated exposure. - Central nervous system

Aspiration hazard  
Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

### **Dichloroacetic Acid**

Acute toxicity  
LD50 Oral - Rat - 2.820 mg/kg (OECD Test Guideline 401) Inhalation: No data available  
LD50 Dermal - Rabbit - 797 mg/kg Remarks: (ECHA)

Skin corrosion/irritation  
Skin - Rabbit  
Result: Causes severe burns. Remarks: (RTECS)

Serious eye damage/eye irritation  
Eyes - Rabbit  
Result: Causes serious eye damage. Remarks: (RTECS)  
Causes serious eye damage.

Respiratory or skin sensitization  
No data available  
Germ cell mutagenicity  
Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells  
Result: negative  
Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium Result: negative

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Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells  
Result: negative  
Species: Mouse - male - Liver cells Result: negative  
Remarks: (ECHA)  
Method: OECD Test Guideline 475  
Species: Rat - male and female - Bone marrow Result: negative  
Carcinogenicity  
Suspected of causing cancer.

Reproductive toxicity  
May damage the unborn child.  
May damage fertility. Studies indicating a hazard to babies during the lactation period

Specific target organ toxicity - single exposure  
No data available

Specific target organ toxicity - repeated exposure  
Oral - May cause damage to organs through prolonged or repeated exposure. - Brain, Liver, Testes

Aspiration hazard  
No data available

## **SECTION 12: ECOLOGICAL INFORMATION**

### 12.1 Toxicity

Mixture

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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

Discharge into the environment must be avoided.

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## Components

### Toluene

Toxicity to fish flow-through test LC50 - Oncorhynchus kisutch (coho salmon) –  
5,5 mg/l - 96 h  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates EC50 - Ceriodaphnia dubia (water flea) - 3,78 mg/l - 48 h (US-EPA)

Toxicity to bacteria static test EC50 - Bacteria - 84 mg/l - 24 h  
Remarks: (ECHA)

### Dichloroacetic Acid

No data available

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 106  
mg/l - 24 h Remarks: (ECOTOX Database)

## SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 2924                      IMDG: 2924                      IATA: 2924

14.2 UN proper shipping name

ADR/RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Toluene, Dichloroacetic Acid)  
IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Toluene, Dichloroacetic Acid) IATA:  
Flammable liquid, corrosive, n.o.s. (Toluene, Dichloroacetic Acid)

14.3 Transport hazard class(es)

ADR/RID: 3 (8)                      IMDG: 3 (8)                      IATA: 3 (8)

14.4 Packaging group

ADR/RID: II                      IMDG: II                      IATA: II

14.5 Environmental hazards

ADR/RID: no                      IMDG Marine pollutant: no                      IATA: no

14.6 Special precautions for user

No data available

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## SECTION 15: REGULATORY INFORMATION

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use: Toluene

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

National legislation: FLAMMABLE LIQUIDS

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

: ENVIRONMENTAL HAZARDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

## SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

EUH071	Corrosive to the respiratory tract.
H225	Highly flammable liquid and vapor.
H290	May be corrosive to metals.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H360FD	May damage fertility. May damage the unborn child.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs (/*_2ORGAN_REPEAT*/) through prolonged or repeated exposure.

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- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects. .
- H412 Harmful to aquatic life with long lasting effects.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. ChemGenes India Pvt. Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.

-----End of MSDS -----