



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/28/2016

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number	BI0833
Product name	Deblock Reagent 3% (v/v) Dichloroacetic Acid in Dichloromethane For DNA Synthesis Novabiochem®

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Skin irritation, Category 2, H315  
Eye irritation, Category 2A, H319  
Carcinogenicity, Category 2, H351  
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, Central nervous system, H335 H336  
Specific target organ systemic toxicity - repeated exposure, Category 2, Blood, Liver, Kidney, H373  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Warning

*Hazard Statements*  
H315 Causes skin irritation.

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H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H373 May cause damage to organs (Blood, Liver, Kidney) through prolonged or repeated exposure.

### *Precautionary Statements*

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P321 Specific treatment (see supplemental first aid instructions on this label).

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

### **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Chemical nature

organic solvents

### **Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*dichlormethane (>= 90 % - <= 100 % )*

75-09-2

Exact percentages are being withheld as a trade secret.

*Dichloroacetic acid (>= 1 % - < 5 % )*

79-43-6

Exact percentages are being withheld as a trade secret.

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

*Inhalation*

After inhalation: fresh air. Call in physician.

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### *Skin contact*

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

### *Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

irritant effects, respiratory paralysis, depressed respiration, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Nausea, Vomiting, CNS disorders  
Risk of corneal clouding.

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

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

No information available.

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## **SECTION 5. Fire-fighting measures**

### **Extinguishing media**

#### *Suitable extinguishing media*

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

#### *Unsuitable extinguishing media*

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

### **Special hazards arising from the substance or mixture**

Combustible.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Hydrogen chloride gas, Phosgene

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

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

#### *Further information*

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

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## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

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Advice for emergency responders:

Protective equipment see section 8.

## Environmental precautions

Do not let product enter drains.

## 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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

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

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at room temperature.

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### Ingredients

Basis	Value	Threshold limits	Remarks
<i>dichlormethane 75-09-2</i>			
ACGIH	Time Weighted Average (TWA):	50 ppm	
<i>Dichloroacetic acid 79-43-6</i>			
ACGIH	Time Weighted Average (TWA):	0.5 ppm	
	Skin designation:		Can be absorbed through the skin.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

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### *Eye/face protection*

Safety glasses

### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### *Other protective equipment:*

protective clothing

### *Respiratory protection*

required when vapors/aerosols are generated.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	No strong odor known.
Odor Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	No information available.

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Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

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## SECTION 10. Stability and reactivity

### Reactivity

See below

### Chemical stability

Sensitivity to light

### Possibility of hazardous reactions

Risk of explosion with:

Alkali metals, nitrogen oxides, nitrogen dioxide, Potassium, sodium azide, perchloric acid, Nitric acid, aluminum chloride, Amines, Oxygen, (as liquefied gas), powdered aluminum, sodium, Aluminum

aromatic hydrocarbons, with  
powdered aluminum

Exothermic reaction with:

Alkaline earth metals, Powdered metals, amides, alcoholates, nonmetallic oxides, potassium tert-butanolate, sodium amide, Lithium

### Conditions to avoid

no information available

### Incompatible materials

rubber, various plastics, Light metals, Metals, Mild steel

### Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact

*Target Organs*

Eyes

Skin

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cardiovascular system  
Central nervous system

### *Acute inhalation toxicity*

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

### *Skin irritation*

Mixture causes skin irritation.

### *Eye irritation*

Mixture causes serious eye irritation.

### *CMR effects*

Carcinogenicity:

Evidence of a carcinogenic effect.

### *Specific target organ systemic toxicity - single exposure*

Target Organs: Respiratory system, Central nervous system

Mixture may cause respiratory irritation.

Mixture may cause drowsiness or dizziness.

### *Specific target organ systemic toxicity - repeated exposure*

Target Organs: Blood, Liver, Kidney

Mixture may cause damage to organs through prolonged or repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC	Group 2A: Probably carcinogenic to humans
	dichlormethane 75-09-2
	Group 2B: Possibly carcinogenic to humans
	Dichloroacetic acid 79-43-6
OSHA	dichlormethane 75-09-2
NTP	Anticipated carcinogen.
	dichlormethane 75-09-2
ACGIH	Confirmed animal carcinogen with unknown relevance to humans.
	dichlormethane 75-09-2
	Dichloroacetic acid 79-43-6

## **Further information**

Swallowing may result in damage to the following:

Liver, Kidney

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## Systemic effects:

After absorption of large quantities:

CNS disorders, Drowsiness, Dizziness, drop in blood pressure, Cardiac irregularities, depressed respiration, inebriation, Unconsciousness, narcosis, respiratory paralysis

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

Handle in accordance with good industrial hygiene and safety practice.

## Ingredients

### *dichlormethane*

#### *Acute oral toxicity*

LD50 Rat: > 2,000 mg/kg

OECD Test Guideline 401

LDLO human: 357 mg/kg (RTECS)

#### *Acute inhalation toxicity*

LC50 Rat: 88 mg/l; 30 min ; vapor (IUCAL)

#### *Acute dermal toxicity*

LD50 Rat: > 2,000 mg/kg

OECD Test Guideline 402

#### *Skin irritation*

Rabbit

Result: Irritations

OECD Test Guideline 404

#### *Eye irritation*

Rabbit

Result: Eye irritation

(ECHA)

#### *Sensitization*

Sensitization test: Mouse

Result: Does not cause skin sensitization.

Method: OECD Test Guideline 429

#### *Repeated dose toxicity*

Rat

male and female

Oral

104 Weeks

daily

NOAEL: 6 mg/kg

OECD Test Guideline 453

Rat

male and female

Inhalation

vapor

104 Weeks

daily

NOAEL: 0.71 mg/l

OECD Test Guideline 453

#### *Germ cell mutagenicity*

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### *Genotoxicity in vivo*

In vivo micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

### *Genotoxicity in vitro*

Mutagenicity (mammal cell test): chromosome aberration.

Result: positive

Method: OECD Test Guideline 473

Ames test

Salmonella typhimurium

Result: positive

Method: OECD Test Guideline 471

### *Dichloroacetic acid*

*Acute oral toxicity*

LD50 Rat: 2,820 mg/kg (RTECS)

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: positive

(National Toxicology Program)

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## SECTION 12. Ecological information

### Ecotoxicity

No information available.

### Persistence and degradability

No information available.

### Bioaccumulative potential

No information available.

### Mobility in soil

No information available.

## Ingredients

### *dichlormethane*

*Toxicity to fish*

flow-through test LC50 Pimephales promelas (fathead minnow): 193 mg/l; 96 h

Analytical monitoring: yes

US-EPA

*Toxicity to daphnia and other aquatic invertebrates*

static test LC50 Daphnia magna (Water flea): 27 mg/l; 48 h

US-EPA

*Toxicity to algae*

IC50 Pseudokirchneriella subcapitata (green algae): > 660 mg/l; 96 h (IUCLID)

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### *Toxicity to bacteria*

static test EC50 activated sludge: 2,590 mg/l; 40 min

Analytical monitoring: yes

OECD Test Guideline 209

### *Toxicity to fish (Chronic toxicity)*

flow-through test NOEC Pimephales promelas (fathead minnow): 83 mg/l; 32 d

Analytical monitoring: yes(ECHA)

### *Biodegradability*

68 %; 28 d; aerobic

OECD Test Guideline 301D

Readily biodegradable.

### *Distribution among environmental compartments*

Adsorption/Soil

log Koc: 1.00

(experimental)

Mobile in soils (Lit.)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

### *Henry constant*

329 Pa·m<sup>3</sup>/mol

Method: (experimental)

(Lit.) Distribution preferentially in air.

## *Dichloroacetic acid*

### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 106 mg/l; 24 h (ECOTOX Database)

### *Toxicity to bacteria*

EC0 Bacteria: 100 - 1,000 mg/l(External MSDS)

### *Biodegradability*

98 %; 14 d

OECD Test Guideline 301C

Readily biodegradable.

### *Partition coefficient: n-octanol/water*

log Pow: 0.92

(experimental)

(Lit.)

Bioaccumulation is not expected.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2922
Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (CONT. DICHLOROMETHANE, DICHLOROACETIC ACID)
Class	8 (6.1)
Packing group	II
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 2922
Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (CONT. DICHLOROMETHANE, DICHLOROACETIC ACID)
Class	8 (6.1)
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

### Sea transport (IMDG)

UN number	UN 2922
Proper shipping name	CORROSIVE LIQUID, TOXIC, N.O.S. (CONT. DICHLOROMETHANE, DICHLOROACETIC ACID)
Class	8 (6.1)
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-B
Segregation Group	0001 Acids

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## SECTION 15. Regulatory information

### United States of America

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

*Ingredients*

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dichlormethane 75-09-2 97.5 %

**SARA 302**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

*Ingredients*

dichlormethane

**DEA List I**

Not listed

**DEA List II**

Not listed

**US State Regulations**

**Massachusetts Right To Know**

*Ingredients*

dichlormethane

**Pennsylvania Right To Know**

*Ingredients*

dichlormethane

**New Jersey Right To Know**

*Ingredients*

dichlormethane

Dichloroacetic acid

**California Prop 65 Components**

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

*Ingredients*

Dichloroacetic acid

**California Prop 65 Components**

WARNING: this product contains a chemical known in the State of California to cause cancer.

*Ingredients*

dichlormethane

Dichloroacetic acid

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## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.  
DSL: All components of this product are on the Canadian DSL

## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

*Hazard pictograms*



### *Signal Word*

Warning

### *Hazard Statements*

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs (Blood, Liver, Kidney) through prolonged or repeated exposure.

### *Precautionary Statements*

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P314 Get medical advice/ attention if you feel unwell.

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

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

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

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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Revision Date 06/28/2016

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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