



# MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/02/2012

Version 1.1

## SECTION 1. Identification

### Product identifier

Product number	108416
Product name	Titriplex® I GR for analysis (nitrilotriacetic acid)

### 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   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-751-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)  e-mail: mm_sds@merckgroup.com
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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

Acute toxicity, Category 4, Oral, H302  
Eye irritation, Category 2, H319  
Carcinogenicity, Category 2, H351

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

### GHS-Labeling

#### Hazard pictograms



*Signal Word*  
Warning

#### Hazard Statements

H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

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H351 Suspected of causing cancer.

## *Precautionary Statements*

P281 Use personal protective equipment as required.

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.

## OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## Other hazards

None known.

## SECTION 3. Composition/information on ingredients

Formula	C <sub>6</sub> H <sub>9</sub> NO <sub>6</sub> (Hill)
CAS-No.	139-13-9
Molar mass	191.14 g/mol

## Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

*Titriplex I ( <= 100 % )*

139-13-9

## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. Call in physician.

#### *Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. 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

### 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*

Water, 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 material

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

Fire may cause evolution of:

nitrogen oxides

#### 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: Avoid substance contact. Avoid inhalation of dusts.

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

Advice for emergency responders: Protective equipment see section 8.

#### Environmental precautions

Do not empty into 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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### SECTION 7. Handling and storage

#### Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

#### Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Storage temperature: no restrictions.

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

Contains no substances with occupational exposure limit values.

### 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.

#### *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.

Recommended:

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

#### *Other protective equipment:*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state

solid

Color

white

Odor

odorless

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Odor Threshold	No information available.
pH	at 68 °F ( 20 °C) acidic, Aqueous solution
Melting point	468 °F ( 242 °C) (decomposition)
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.
Relative density	No information available.
Water solubility	1.28 g/l at 72.5 °F ( 22.5 °C)
Partition coefficient: n-octanol/water	log Pow: -3.81 (calculated) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Bulk density	ca. 350 kg/m <sup>3</sup>

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### SECTION 10. Stability and reactivity

#### Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

#### Chemical stability

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

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### Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Strong bases

### Conditions to avoid

Strong heating.

### Incompatible materials

Aluminum, Copper, Zinc

### 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, Ingestion

#### *Acute oral toxicity*

LD50 rat: 1,100 mg/kg (RTECS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

#### *Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

#### *Eye irritation*

Causes serious eye irritation.

#### *Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(National Toxicology Program)

#### *CMR effects*

Carcinogenicity:

Suspected of causing cancer.

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

The substance or mixture is not classified as specific target organ toxicant, single exposure.

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

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

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IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

Anticipated carcinogen.

Titriplex I

139-13-9

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Further information

Systemic effects:

Damage to:

Liver, Kidney

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 *S.gairdnerii*: 92.3 mg/l; 96 h (Lit.)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 79 mg/l; 24 h (ECOTOX Database)

*Toxicity to bacteria*

microtox test EC50 *Photobacterium phosphoreum*: 1,003 mg/l; 15 min (Lit.)

### Persistence and degradability

No information available.

### Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: -3.81

(calculated)

(Lit.) Bioaccumulation is not expected (log Pow <1).

### Mobility in soil

No information available.

### Other adverse effects

*Additional ecological information*

Discharge into the environment must be avoided.

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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)

Not classified as dangerous in the meaning of transport regulations.

#### Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

#### Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

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### SECTION 15. Regulatory information

#### United States of America

##### OSHA Hazards

Harmful if swallowed.

Eye irritant

Carcinogen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

##### SARA 311/312 Hazards

Acute Health Hazard

Chronic Health Hazard

#### US State Regulations

##### Massachusetts Right To Know

*Ingredients*

Titriplex I

##### Pennsylvania Right To Know

*Ingredients*

Titriplex I

##### New Jersey Right To Know

*Ingredients*

Titriplex I

##### California Prop 65 Components

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

*Ingredients*

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Titriplex I

### Notification status

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL list.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

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

H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.

### 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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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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