

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Mixture
Product name	: Cetyltrimethylammonium Bromide (CTAB) - 2
Product code	: CTAB 200-07
Synonyms	: n-Cetyl n,n,n,tri methyl ammonium bromide, 99%, Cetrimonium bromide, Palmityltrimethylammonium bromide, CTAB

#### 1.2. Recommended use and restrictions on use

Recommended use	: Industrial
Restrictions on use	: Not determined

#### 1.3. Supplier

OPS Diagnostics  
291 Route 22 East Building 6  
Lebanon, NJ 08833  
[info@opsdx.com](mailto:info@opsdx.com)  
opsdiagnostics.com

#### 1.4. Emergency telephone number

Emergency number : (908)253-3444

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute Toxicity (Category 4)	H302	: Harmful if swallowed
Skin irritation (Category 2)	H315	: Causes skin irritation
Serious eye damage (Category 1)	H318	: Causes eye damage
Specific target organ toxicity – single exposure (Category 3), Respiratory system	H335	: May cause respiratory irritation
Specific target organ toxicity – repeated exposure (Category 2) Gastrointestinal tract	H373	: May cause damage to organs through prolonged or repeated exposure if swallowed
Short-term (acute) aquatic hazard (Category 1)	H400	: Very toxic to aquatic life
Long-term (chronic) aquatic hazard (Category 1)	H410	: Very toxic to aquatic life with long lasting effects

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Signal Word : Danger

##### Hazard Statements

H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage

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H335	May cause respiratory irritation
H373	May cause damage to organs (Gastrointestinal tract) through prolonged or repeated exposure if swallowed
H410	Very toxic to aquatic life with long lasting effects
<b>Precautionary Statements</b>	
P273	Avoid release to the environment
P280	Wear protective gloves/eye protection/face protection
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell
P302 + P352	IF ON SKIN: Wash with plenty of 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
<b>Supplemental Hazard Statements</b>	None
<b>Reduced Labeling (&lt;= 125 ml)</b>	
<b>Pictogram</b>	
<b>Signal Word</b>	Danger
<b>Hazard Statements</b>	
H318	Causes serious eye damage
<b>Precautionary Statements</b>	
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Supplemental Hazard Statements</b>	None

### 2.3. Other hazards which do not result in classification

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.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

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Component	Classification	Concentration
N-Cetyl-N'N'N-trimethylammonium bromide		
CAS-No. 57-09-0 EC-No.200-311-3	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; 1; Aquatic Chronic 1; H302, H315, H318, H335, H373, H400, H410 M-Factor – Aquatic Acute: 100 – Aquatic Chronic: 10	<= 100 %

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first-aid measures

First-aid measures general	: Show this material safety data sheet to the doctor in attendance.
First-aid measures after inhalation	: Fresh air. Call in physician
First-aid measures after skin contact	: Immediately remove contaminated clothing. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water. Immediately call in ophthalmologist. Remove contact lenses.
First-aid measures after ingestion	: Immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : See section 2.2 and/or section 11

### 4.3. Immediate medical attention and special treatment, if necessary

Not applicable.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Alcohol-resistant foam. Dry chemical or carbon dioxide.
Unsuitable extinguishing media	: Not determined

### 5.2. Specific hazards arising from the chemical

Reactivity	: Carbon oxides Nitrogen oxides (NOx) Hydrogen bromide gas Combustible Vapors are heavier than air and may spread along floors Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapors possible in the event of fire.
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### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing system from contaminating surface water or the ground water system.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures	: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
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#### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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### 6.2. Environmental precautions

Do not let product enter drains.

### 6.3. Methods and material for containment and cleaning up

Methods for 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.
Other information	: For disposal see section 13.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: For precautions see section 2.2.
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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Tightly closed. Dry.
Storage class	: Storage class (TRGS 510): 11: Combustible Solids

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Ingredients with workplace control parameters

### 8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation.
Environmental exposure controls	: Do not let product enter drains.

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### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product state 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Eye 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 and body 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Appearance	: Powder
Color	: White
Odor	: Weak
Odor threshold	: No data available
pH	: 5.0 – 7 at 36.4 g/l at 25°
pH solution	: 7.5 – 8
Melting point	: 248° - 251°C

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Freezing point	: No data available
Boiling point	: No data available
Flash point	: 244°C – closed cup
Relative evaporation rate (butyl acetate = 1)	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: 2.30 g/cm <sup>3</sup>
Solubility	: 39.4 g/l at 20°C – completely soluble
Log Pow	: 2.26 – (Lit.), Bioaccumulation is not expected
Auto-ignition temperature	: 210°C at 0.3 hPa
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

Surface tension 39 mN/m at 25°C

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. 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.

### 10.2. Chemical stability

Stable under normal conditions

### 10.3. Possibility of hazardous reactions

Violent reactions possible with: Strong oxidizing agents. Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

### 10.4. Conditions to avoid

Strong heating.

### 10.5. Incompatible materials

No data available

### 10.6. Hazardous decomposition products

On combustion, forms : See section 5

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Absorbed through skin. Hazardous in case of skin contact (irritant).

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Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Hazardous in case of inhalation (lung irritant)
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated	: Not classified exposure
Aspiration hazard	: Not classified
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use

LD50 Oral Rat	1500 mg/kg
LD50 Dermal Rabbit	2000 mg/kg
LC50 Inhalation Rat	>50 mg/L

## SECTION 12: Ecological information

### 12.1. Toxicity

Toxicity to fish semi-static test LC50 – Danio rerio (zebra fish) – 0.2 mg/l - 96 h (OECD Test Guideline 203)  
Toxicity to daphnia and other aquatic invertebrates semi-static test EC50 – Daphnia magna (Water flea) – 0.037 mg/l – 48 h (OECD Test Guideline 202)  
Toxicity to algae static test ErC50 – Pseudokirchneriella subcapitata (green algae) – 0.00411 mg/l – 72 h (OECD Test Guideline 201) static test NOEC – Desmodesmus subspicatus (green algae) – 0.001 mg/l – 72 h (OECD Test Guideline 201)  
Toxicity to bacteria EC50 – activated sludge – 19 mg/l  
Remarks: (ECHA)  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity). NOEC – Daphnia magna (Water flea) – 0.023 mg/l – 21 d (OECD Test Guideline 211)

### 12.2. Persistence and degradability

Biodegradability aerobic Chemical oxygen demand – Exposure time 11 d  
Result: 100% - Readily biodegradable. (OECD Test Guideline 301E)

### 12.3. Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) – 8 Weeks – 0.05 mg/l (N-Cetyl-N’N’N-trimethylammonium bromide)  
Bioconcentration factor (BCF): 407 - 741  
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

### 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. Endocrine disrupting properties

Product:

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Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7. Other adverse effects

Very toxic to aquatic life.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 3077	IMDG: 3077	IATA: 3077
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### 14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (N-Cetyl-N'N'N-trimethylammonium bromide)  
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (N-Cetyl-N'N'N-trimethylammonium bromide)  
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (N-Cetyl-N'N'N-trimethylammonium bromide)

### 14.3 Transport hazard class(es)

ADR/RID: 9	IMDG: 9	IATA: 9
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### 14.4 Packaging group

ADR/RID: III	IMDG: III	IATA: III
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### 14.5 Environmental hazards

ADR/RID: yes	IMDG Marine pollutant: yes	IATA: yes
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### 14.6 Special precautions for user

Tunnel restriction code: (-)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg/L, not dangerous goods of Class 9.

## 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

National legislation

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



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### E1 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

#### Other information

: **DISCLAIMER OF LIABILITY** The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.