

Safety Data Sheet

acc. to OSHA HCS (HazCom 2012)

Printing date 01/27/2017

Reviewed on 01/27/2017

1 Identification

- **Product identifier**
- **Trade name:** Chlorine Total DPD
- **Catalogue number:** AC4P72, AQ250T, AC72P1, AC72P2, AQ3170
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Thermo Fisher Scientific
Water and Lab Products
22 Alpha Road
Chelmsford, MA 01824, USA
phone: 1-978-232-6000
Made in Germany
- **Informing Department:** usbev.customerservice@thermofisherscientific.com
- **Emergency telephone number:**
24 hr Emergency
CHEMTREC®
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: 1-703-527-3887
(collect calls accepted)

2 Hazard(s) identification

- **Classification of the substance or mixture** The product is not classified as hazardous.
- **Label elements**
- **GHS label elements** none
- **Hazard pictograms** none
- **Signal word** none
- **Hazard statements** none
- **Other hazards** No further relevant information available.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of organic and inorganic compounds

· **Composition and Information on Ingredients:**

CAS: 7681-11-0 EINECS: 231-659-4 RTECS: TT2975000	potassium iodide	10-20%
CAS: 6283-63-2 EINECS: 228-500-6 RTECS: SS 9625000	N,N-Diethyl-p-phenylenediamine sulfate (1:1) ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.1-≤2.5%
CAS: 139-33-3 EINECS: 205-358-3	disodium dihydrogenethylenediaminetetraacetate ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.1-≤2.5%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed**
after inhalation:
irritations
allergic reactions
after swallowing of large amounts:
headache
thirst
methaemoglobinaemia
sickness
vomiting
abdominal pain
drop in blood pressure
resorption
weakness
disorder of electrolyte balance
mucous membrane irritation
coughing
breathing difficulty
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
Substance/product is self extinguishing, but can burn when combined with flammable material.
Formation of toxic gases is possible during heating or in case of fire.
Sulfur oxides (SO_x)
Nitrogen oxides (NO_x)
Carbon monoxide (CO) and carbon dioxide (CO₂)
Phosphorus oxides (P_xO_x)
Potassium oxide
Sodium monoxide
Hydrogen iodide (HI)
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:** Wear protective equipment. Keep unprotected persons away.
- **Advice for emergency responders:** Protective equipment: see section 8
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.

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Dispose contaminated material as waste according to item 13.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

- **Advice on safe handling:**

Thorough dedusting.

Prevent formation of dust.

- **Hygiene measures:**

The usual precautionary measures for handling chemicals should be followed.

Wash hands before breaks and at the end of work.

Do not eat, drink or smoke when using this product.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:** Store in a cool location.

- **Information about storage in one common storage facility:** Store away from oxidizing agents.

- **Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Protect from exposure to the light.

Store in dry conditions.

Protect from humidity and water.

- **Recommended storage temperature:** 20 °C +/- 5 °C (approx. 68°F)

- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 7681-11-0 potassium iodide

TLV (USA) Long-term value: 0.01* ppm

*as inhalable fraction and vapor

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Engineering measures:**

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

See item 7.

- **Personal protective equipment:**

- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P1

- **Protection of hands:**

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

- **Penetration time of glove material**

Value for the permeation: Level ≤ 1 (10 min)

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

Safety glasses

use against the effects of fumes / dust

- **Body protection:** Protective work clothing

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- **Limitation and supervision of exposure into the environment:** No further relevant information available.

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Appearance:	
Form / Physical state:	Powder
Color:	White
· Odor: Odorless	
· Odor threshold: Not applicable.	
· pH-value (10 g/l) at 20 °C (68 °F): 6.3	
· Melting point/freezing point: Not determined.	
· Initial boiling point and boiling range: Not determined.	
· Flash point: Not applicable.	
· Flammability (solid, gas): Not applicable.	
· Decomposition temperature: Not determined.	
· Auto-ignition temperature: Product is not self-igniting.	
· Danger of explosion: Product does not present an explosion hazard.	
· Flammability or explosive limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· Oxidizing properties: none	
· Vapor Pressure: Not applicable.	
· Density: Not determined.	
· Relative density: Not determined.	
· Vapor density: Not applicable.	
· Evaporation rate: Not applicable.	
· Solubility(ies)	
Water:	Soluble.
· Partition coefficient (n-octanol/water): Not applicable.	
· Viscosity: Not applicable.	
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100 %
· Other information No further relevant information available.	

10 Stability and reactivity

- **Reactivity** see section "Possibility of hazardous reactions"
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** see section 5

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

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· LD/LC50 values that are relevant for classification:		
CAS: 7681-11-0 potassium iodide		
Oral	LD50	2779 mg/kg (rat) (MERCK)
CAS: 6283-63-2 N,N-Diethyl-p-phenylenediamine sulfate (1:1)		
Oral	LD50	497 mg/kg (rat) (MERCK)
Dermal	LD50	1100 mg/kg (ATE)
CAS: 139-33-3 disodium dihydrogenethylenediaminetetraacetate		
Oral	LD50	2850 mg/kg (rat) (BASF-Test similar to OECD 401) (BASF-Test: 7 days; OECD 401: 14 days)
Inhalative	LC50	1.5 mg/l/4h (ATE) (Aerosol) (BASF: OECD 403 LC50 rat = > 1 - < 5 mg/l/6h)

· **Primary irritant effect:**

- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS 6283-63-2: DPD may cause allergic skin reaction

CAS: 139-33-3 disodium dihydrogenethylenediaminetetraacetate		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

- **Sensitization:** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS 6283-63-2: Sensitization possible in predisposed persons.

The following applies to iodides in general: Sensitization possible at predisposed persons.

CAS: 139-33-3 disodium dihydrogenethylenediaminetetraacetate		
Sensitization	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)

· **IARC (International Agency for Research on Cancer)**

CAS: 139-05-9	sodium cyclamate	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.		
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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.		
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· **Other information:** see section 8 / 15

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

- **Carcinogenicity** Based on available data, the classification criteria are not met.

- **Reproductive toxicity** Based on available data, the classification criteria are not met.

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.

- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS: 7681-11-0 potassium iodide		
OECD 471	(negative)	(Bacterial Reverse Mutation Test - Ames test)

· **Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Iodine salts can cause birth defects, illness and death of a fetus. (GESTIS)

Iodide chronic: hypothyroidism

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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 7681-11-0 potassium iodide	
EC50	2.7 mg/l/24h (Daphnia magna)
LC50	8960 mg/l/96h (rainbow trout) (ECOTOX)
CAS: 139-33-3 disodium dihydrogenethylenediaminetetraacetate	
EC50 (static)	> 100 mg/l/48h (Daphnia magna) (DIN 38412 Teil 11) (BASF)
NOEC	≥ 36.9 mg/l (zebrafish) (35d, OECD 210) (BASF; read across)
EC50	>100 mg/l/72 h (Scenedesmus subspicatus) (88/302/EWG, part C) (BASF; read across)
LC50 (static)	> 100 mg/l/96h (bluegill) (BASF, read across)

- **Bacterial toxicity:** sulfates toxic > 2.5 g/l

- **Other information:**

Toxic for fish:

sulfates > 7 g/l

- **Persistence and degradability** No further relevant information available.

- **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow 1-3 = Not worth-mentioning accumulating in organisms.

log Pow < 1 = Does not accumulate in organisms.

CAS: 7681-11-0 potassium iodide	
log Pow	0.04 (.) (MERCK)
CAS: 6283-63-2 N,N-Diethyl-p-phenylenediamine sulfate (1:1)	
log Pow	2.24 (.) (calculated)
CAS: 139-33-3 disodium dihydrogenethylenediaminetetraacetate	
log Pow	-4.3 (.) (BASF)
BCF	1.8 (bluegill) (conc. 0.08 mg/l, 28d) (ECHA, registrant: read across CAS 13235-36-4)

- **Mobility in soil** No further relevant information available.

- **Other adverse effects**

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

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

Disposal must be made according to official regulations.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	none
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· UN proper shipping name · DOT, IMDG, IATA	none
· Transport hazard class(es) · DOT, IMDG, IATA · Class	none
· Packing group · DOT, IMDG, IATA	none
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

15 Regulatory information

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

· Sara

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

CAS No. 6283-63-2 listed under CAS No. 6065-27-6 1,4-Benzenediamine, N1,N1-diethyl-, sulfate (1:?)

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· New Jersey Right-to-Know List:

None of the ingredients is listed.

· New Jersey Special Hazardous Substance List:

None of the ingredients is listed.

· Pennsylvania Right-to-Know List:

None of the ingredients is listed.

· Pennsylvania Special Hazardous Substance List:

None of the ingredients is listed.

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· Information about limitation of use: Not required.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

- **Date of preparation / last revision** 01/27/2017 / -

- **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

IARC - International Agency for Research on Cancer

•Group 1 - Carcinogenic to humans

•Group 2A - Probably carcinogenic to humans

•Group 2B - Possibly carcinogenic to humans

•Group 3 - Not classifiable as to carcinogenicity to humans

•Group 4 - Probably not carcinogenic to humans

NTP - National Toxicology Program, U.S. Department of Health and Human Services

•Group K - Known to be Human Carcinogens

•Group R - Reasonably Anticipated to be Human Carcinogens

ACGIH[®] - American Conference of Governmental Industrial Hygienists

•A1 - Confirmed human carcinogen

•A2 - Suspected human carcinogen

•A3 - Confirmed animal carcinogen with unknown relevance to humans

•A4 - Not classifiable as a human carcinogen

•A5 - Not suspected as a human carcinogen

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- **Sources** Data arise from safety data sheets, reference works and literature.