Safety Data Sheet

acc. to OSHA HCS

Printing date 01/08/2026 Reviewed on 11/19/2025

1 Identification

- **Product identifier**

- Trade name: Buffer Free Chlorine
- Article number: 330007
- Application of the substance / the preparation: Reagent for the chlorine measuerements with analyzer

- **Details of the supplier of the safety data sheet**

- Manufacturer/Supplier:
YSI
1725 Brannum Lane
Yellow Springs, OH 45387
USA
phone: +1 937-767-7241

- Information department: Email: MSDSinfo@ysi.com

- **Emergency telephone number:** Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure 2 H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Label elements:**
- GHS label elements: The product is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms: GHS08

- Signal word: Warning

- Hazard-determining components of labeling:
Disodium ethylenediaminetetraacetate dihydrate

- Hazard statements:
H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

- Precautionary statements:
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P314 Get medical advice/attention if you feel unwell.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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Trade name: Buffer Free Chlorine

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- Information pertaining to particular dangers for man and environment:
- Classification system:
- NFPA ratings (scale 0 - 4)



Health = 1
Fire = 0
Reactivity = 0

- HMIS-ratings (scale 0 - 4)



Health = 0
Fire = 0
Reactivity = 0

- **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.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- **Mixture**
- Description: Solids mixture

• Dangerous components:		
CAS: 6381-92-6	Disodium ethylenediaminetetraacetate dihydrate	3 – 7%

4 First-aid measures

- **Description of first aid measures**
- After inhalation:
Supply fresh air.
Consult a doctor.
- After skin contact:
Wash skin with water or shower.
Take off contaminated clothing.
If skin irritation or rash occurs: Get medical advice/attention.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.

- **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described on the labelling (see section 2.2) and/or in chapter 11.

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• **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.
• For safety reasons unsuitable extinguishing agents: There are no extinguishing agent restrictions for this substance/mixture.

• **Special hazards arising from the substance or mixture**
Flammable.
In case of fire, the following can be released:
Nitrogen oxides (NOx)

• **Advice for firefighters**
• Protective equipment:
Stay in the danger zone only with self-contained breathing apparatus. Avoid skin contact by keeping a safe distance or wearing suitable protective clothing.

6 Accidental release measures

• **Personal precautions, protective equipment and emergency procedures**
Wear personal protective equipment (see section 8).
Avoid formation of dust.

• **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

• **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose of the collected material according to regulations.
Wash off residuals with water.
• Protective Action Criteria for Chemicals

• PAC-1:		
CAS: 6381-92-6	Disodium ethylenediaminetetraacetate dihydrate	30 mg/m³

• PAC-2:		
CAS: 6381-92-6	Disodium ethylenediaminetetraacetate dihydrate	330 mg/m³

• PAC-3:		
CAS: 6381-92-6	Disodium ethylenediaminetetraacetate dihydrate	2,000 mg/m³

• **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

• **Precautions for safe handling** Wear personal protective equipment (see section 8)
• Information about protection against explosions and fires: No special measures required.

• **Conditions for safe storage, including any incompatibilities**
• Requirements to be met by storerooms and receptacles:
No special requirements.
Recommendation: Store in the original container.
• Information about storage in one common storage facility: No special requirements.

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- Further information about storage conditions:
  Keep receptacle tightly sealed.
  Recommended storage temperature: 15 - 25 °C
- **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:
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.
- **General protective and hygienic measures:**
  Avoid contact with the eyes and skin.
  Take off contaminated clothing and wash it before reuse.
  Do not inhale dust.
  Wash hands before breaks and at the end of work.
- Personal protective equipment:
- Breathing equipment:
  Required when dusts are formed.
  Recommended filter type: P2
- Protection of hands: Protective gloves recommended for frequent or long-term skin contact.
- Material of gloves
  - For full contact:
  Nitrile rubber, NBR
  Recommended material thickness: ≥ 0.11 mm
  Breakthrough time: 480 min

  - For splash contact:
  Nitrile rubber
  Recommended thickness of the material: ≥ 0.11 mm
  Breakthrough time: 480 min

  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- Eye protection: Safety goggles with side protection
- Limitation and supervision of exposure into the environment
  Do not allow product to reach ground water, water course or sewage system.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- General Information

• Color:	Colorless
• Odor:	Odorless
• Melting point/Melting range:	No data available.
• Flammability:	Product is not flammable.
• Flash point:	Not applicable.
• Decomposition temperature:	No data available.

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Trade name: Buffer Free Chlorine

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• pH-value:	No data available.
• Solubility in / Miscibility with	
• Water:	Soluble.
• Vapor pressure:	
• Density:	No data available.

• **Other information**

• Important information on protection of health and environment, and on safety.	
• Ignition temperature:	Product is not selfigniting.
• Danger of explosion:	Product does not present an explosion hazard.
• Solvent separation test	
• VOC content:	0.00 %

10 Stability and reactivity

• **Reactivity**
For flammable, organic substances and mixtures in general, the following applies: With a correspondingly fine distribution, a dust explosion capability can generally be assumed in a whirled-up state.

• **Chemical stability**
• Thermal decomposition / conditions to be avoided:
The product is chemically stable under normal ambient conditions (room temperature).

• **Possibility of hazardous reactions** No dangerous reactions known.

• **Conditions to avoid** No further relevant information available.

• **Incompatible materials:** No further relevant information available.

• **Hazardous decomposition products:** In case of fire: See section 5.

11 Toxicological information

• **Information on toxicological effects**
• Acute toxicity: No quantitative toxicity data are available for this product.
• Acute toxicity estimate of the mixture (ATE) - Calculation method:

• LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)		
Inhalative	LC50	25.9 mg/l, 4 h

CAS: 6381-92-6 Disodium ethylenediaminetetraacetate dihydrate		
Oral	LD50	> 2000 mg/kg (Rat) (Lit.)
Inhalative	LC50	1.5 mg/l, 4 h (ATE)

• Primary irritant effect:
• on the skin: No irritant effect.
• on the eye: No irritating effect.
• Sensitization: No sensitizing effects known.

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• Additional toxicological information:

• Carcinogenic categories

• IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

• NTP (National Toxicology Program)

None of the ingredients is listed.

• OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

• **Toxicity**
• Aquatic toxicity: No further relevant information available.

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

• **Bioaccumulative potential** No further relevant information available.

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

• **Results of PBT and vPvB assessment**
This product does not contain components classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in concentrations of 0.1% or higher.
• PBT: Not applicable.
• vPvB: Not applicable.

• **Other adverse effects**
• General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
• **Additional ecological information:**
• Additional ecological information:
• General notes: Not known to be hazardous to water.
• **Additional ecological information:** Not known to be hazardous to water.

13 Disposal considerations

• **Waste treatment methods**
• Recommendation:
Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

• Uncleaned packagings:
• Recommendation:
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
• Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

• **UN-Number**
• DOT, ADR/RID, IMDG, IATA Void

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• **UN proper shipping name**	
• DOT, ADR/RID, IMDG, IATA	Void
• **Transport hazard class(es)**	
• DOT, ADR/RID, ADN, IMDG, IATA	
• Class	Void
• **Packing group**	
• DOT, ADR/RID, IMDG, IATA	Void
• **Environmental hazards:**	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.
• **Special precautions for user**	Not applicable.
• **UN "Model Regulation":**	Void

15 Regulatory information

• **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

• 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):
None of the ingredients is listed.

• Hazardous Air Pollutants
None of the ingredients is 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.

• Cancerogenity categories

• EPA (Environmental Protection Agency)
None of the ingredients is listed.

• TLV (Threshold Limit Value)
None of the ingredients is listed.

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• NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

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

16 Other information

• Date of preparation / last revision 01/08/2026 / 2
• Abbreviations and acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2

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acc. to OSHA HCS

Printing date 01/08/2026 Reviewed on 01/08/2026

1 Identification

• **Product identifier**

• Trade name: Indicator
• CAS number:
6192-52-5
• Article number: 330007
• EC number:
203-180-0

• Description: Indicator reagent
• Application of the substance / the preparation: Reagent for the chlorine measuerements with analyzer

• **Details of the supplier of the safety data sheet**

• Manufacturer/Supplier:
YSI
1725 Brannum Lane
Yellow Springs, OH 45387
USA
phone: +1 937-767-7241

• Information department: Email: MSDSinfo@ysi.com

• **Emergency telephone number:** Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

2 Hazard(s) identification

• **Classification of the substance or mixture**



GHS05 Corrosion

Corrosive to Metals 1	H290 May be corrosive to metals.
Skin Corrosion 1C	H314 Causes severe skin burns and eye damage.



GHS07

Eye Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.

• **Label elements:**
• GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).

• Hazard pictograms: GHS05, GHS07

• Signal word: Danger

• Hazard-determining components of labeling:
p-Toluenesulfonic acid monohydrate

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Trade name: Indicator

(Contd. of page 1)

- Hazard statements:
  H290 May be corrosive to metals.
  H314 Causes severe skin burns and eye damage.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.

- Precautionary statements:
  P260 Do not breathe dust.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  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.
- Information pertaining to particular dangers for man and environment:
- Classification system:
- NFPA ratings (scale 0 - 4)



Health = 3
Fire = 1
Reactivity = 0

- HMIS-ratings (scale 0 - 4)



Health = 3
Fire = 1
Reactivity = 0

- **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.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- **Substance**
- CAS No. Description
  CAS: 6192-52-5 p-Toluenesulfonic acid monohydrate
- Identification number(s)
- EC number: 203-180-0
- Index number: 016-030-00-2

4 First-aid measures

- **Description of first aid measures**
- After inhalation: Supply fresh air; consult doctor in case of complaints.

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Trade name: Indicator

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- After skin contact:
  Wash skin with water or shower.
  Take off contaminated clothing.
  If skin irritation or rash occurs: Get medical advice/attention.
- After eye contact:
  Rinse opened eye for several minutes under running water.
  Remove contact lenses.
  Consult an ophthalmologist.
- After swallowing:
  Rinse out mouth and then drink plenty of water.
  Consult a doctor.

- **Most important symptoms and effects, both acute and delayed**
  The most important known symptoms and effects are described on the labelling (see section 2.2) and/or in chapter 11.

- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- Suitable extinguishing agents: The product is not flammable. Extinguishing agent to suit environment.
- For safety reasons unsuitable extinguishing agents: There are no extinguishing agent restrictions for this substance/mixture.

- **Special hazards arising from the substance or mixture**
  In case of fire, the following can be released:
  Sulfur oxides (SOx)

- **Advice for firefighters**
- Protective equipment:
  Stay in the danger zone only with self-contained breathing apparatus. Avoid skin contact by keeping a safe distance or wearing suitable protective clothing.
- Additional information Do not allow extinguishing water to enter the surface water or groundwater system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Wear personal protective equipment (see section 8).
  Avoid formation of dust.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**
  Pick up mechanically.
  Dispose of the collected material according to regulations.
  Wash off residuals with water.
- Protective Action Criteria for Chemicals
- PAC-1: 7.7 mg/m³
- PAC-2: 85 mg/m³
- PAC-3: 510 mg/m³

- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

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Trade name: Indicator

(Contd. of page 3)

7 Handling and storage

- **Precautions for safe handling** Wear personal protective equipment (see section 8)
- Information about protection against explosions and fires: No special measures required.

- **Conditions for safe storage, including any incompatibilities**
- Requirements to be met by storerooms and receptacles:
  No special requirements.
  Recommendation: Store in the original container.
- Information about storage in one common storage facility: No special requirements.
- Further information about storage conditions:
  Keep receptacle tightly sealed.
  Recommended storage temperature: 15 - 25 °C

- **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:
  The product does not contain any substances with occupational exposure limits.

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

- **General protective and hygienic measures:**
  Avoid contact with the eyes and skin.
  Take off contaminated clothing and wash it before reuse.
  Wash hands before breaks and at the end of work.

- Personal protective equipment:

- Breathing equipment:
  Required when dusts are formed.
  Recommended filter type: P2

- Protection of hands: Protective gloves
- Material of gloves
  - For full contact:
  Nitrile rubber, NBR
  Recommended material thickness: ≥ 0.11 mm
  Breakthrough time: 480 min

  - For splash contact:
  Nitrile rubber
  Recommended thickness of the material: ≥ 0.11 mm
  Breakthrough time: 480 min

  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Eye protection: Safety goggles with side protection

- Body protection: Protective clothing

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Trade name: Indicator

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• Limitation and supervision of exposure into the environment
Do not allow product to reach ground water, water course or sewage system.

9 Physical and chemical properties

• **Information on basic physical and chemical properties**	
• General Information	
• Color:	Light pink
• Odor:	Odorless
• Odor threshold:	Not determined.
• Melting point/Melting range:	56 °C (132.8 °F)
• Boiling point/Boiling range:	140 °C (284 °F)
• Flammability:	Product is not flammable.
• Flash point:	ca. 180 °C (ca. 356 °F)
• Decomposition temperature:	> 170 °C (> 338 °F)
• pH-value (650 g/l) at 20 °C (68 °F):	1
• Viscosity:	
• Kinematic:	Not applicable.
• Dynamic:	Not applicable.
• Solubility in / Miscibility with	
• Water at 20 °C (68 °F):	750 g/l
• Vapor pressure:	
• Density:	No data available.

• **Other information**	
• Important information on protection of health and environment, and on safety.	
• Ignition temperature:	ca. 600 °C (ca. 1112 °F)
• Danger of explosion:	Dusts can generate explosiv mixtures with air.
• VOC content:	0.00 %

10 Stability and reactivity

• **Reactivity**
For flammable, organic substances and mixtures in general, the following applies: With a correspondingly fine distribution, a dust explosion capability can generally be assumed in a whirled-up state.

• **Chemical stability**
• Thermal decomposition / conditions to be avoided:
The product is chemically stable under normal ambient conditions (room temperature).
Loss of constitutional water on heating.

• **Possibility of hazardous reactions** No dangerous reactions known.

• **Conditions to avoid** No further relevant information available.

• **Incompatible materials:** Acids, alkalis, metals, strong oxidants.

• **Hazardous decomposition products:** In case of fire: See section 5.

11 Toxicological information

• **Information on toxicological effects**
• Acute toxicity: No quantitative toxicity data are available for this product.

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Trade name: Indicator

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• Acute toxicity estimate of the mixture (ATE) - Calculation method:

• LD/LC50 values that are relevant for classification:		
CAS: 6192-52-5 p-Toluenesulfonic acid monohydrate		
Oral	LD50	2570 mg/kg (Rat) (RTECS)

• Primary irritant effect:
• on the skin: Irritant to skin and mucous membranes.
• on the eye: Irritating effect.
• Sensitization: No sensitizing effects known.

• Additional toxicological information:

• Carcinogenic categories
• IARC (International Agency for Research on Cancer) Substance is not listed.
• NTP (National Toxicology Program) Substance is not listed.
• OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

• **Toxicity**
• Aquatic toxicity: No further relevant information available.

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

• **Bioaccumulative potential** No further relevant information available.

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

• **Results of PBT and vPvB assessment**
This product does not contain components classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in concentrations of 0.1% or higher.
• PBT: Not applicable.
• vPvB: Not applicable.

• **Other adverse effects**
• General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water
• **Additional ecological information:**
• Additional ecological information:
• General notes: Not known to be hazardous to water.
• **Additional ecological information:** Not known to be hazardous to water.

13 Disposal considerations

• **Waste treatment methods**
• Recommendation:
Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

• Uncleaned packagings:
• Recommendation:
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
• Recommended cleansing agent: Water, if necessary with cleansing agents.

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Trade name: Indicator

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14 Transport information

• **UN-Number**	
• DOT, ADR/RID, IMDG, IATA	UN2585
• **UN proper shipping name**	
• DOT	Aryl sulfonic acids, solid
• ADR/RID, IMDG, IATA	ARYLSULPHONIC ACIDS, SOLID
• **Transport hazard class(es)**	
• DOT	
	
• Class	8 Corrosive substances
• Label	8
• ADR/RID, IMDG, IATA	
	
• Class	8 Corrosive substances
• Label	8
• **Packing group**	
• ADR/RID, IMDG, IATA	III
• **Environmental hazards:**	
• Marine pollutant:	No
• **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.
• **Special precautions for user**	Warning: Corrosive substances
• EMS Number:	F-A,S-B
• Segregation groups	(SGG1) Acids
• Stowage Category	A
• **UN "Model Regulation":**	UN 2585 ARYLSULPHONIC ACIDS, SOLID, 8, III

15 Regulatory information

• **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
• Sara
• Section 355 (extremely hazardous substances): Substance is not listed.
• Section 313 (Specific toxic chemical listings): Substance is not listed.
• TSCA (Toxic Substances Control Act): Substance is not listed.
• Hazardous Air Pollutants Substance is not listed.
• Proposition 65
• Chemicals known to cause cancer: Substance is not listed.
• Chemicals known to cause reproductive toxicity for females: Substance is not listed.

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- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.

- Cancerogenity categories
- EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.

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

16 Other information

- Date of preparation / last revision 01/08/2026 / 2
- Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Corrosive to Metals 1: Corrosive to metals – Category 1
Skin Corrosion 1C: Skin corrosion/irritation – Category 1C
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

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1 Identification

• **Product identifier**

• Trade name: DPD Reagent
• CAS number:
6283-63-2
• Article number: 330007
• EC number:
228-500-6
• Application of the substance / the preparation: Chemical analytics

• **Details of the supplier of the safety data sheet**

• Manufacturer/Supplier:
YSI
1725 Brannum Lane
Yellow Springs, OH 45387
USA
phone: +1 937-767-7241

• Information department: Email: MSDSinfo@ysi.com

• **Emergency telephone number:** Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

2 Hazard(s) identification

• **Classification of the substance or mixture**



GHS07

Acute Toxicity - Oral 4	H302 Harmful if swallowed.
Acute Toxicity - Dermal 4	H312 Harmful in contact with skin.
Eye Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.

• **Label elements:**
• GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).

• Hazard pictograms: GHS07

• Signal word: Warning

• Hazard-determining components of labeling:
N,N-Diethyl-1,4-phenylenediammonium sulfate

• Hazard statements:
H302+H312 Harmful if swallowed or in contact with skin.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

• Precautionary statements:
P260 Do not breathe dust.

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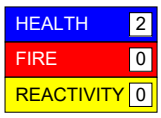
P280 Wear protective gloves / eye protection / face protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P302+P352 If on skin: Wash with plenty of soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- Information pertaining to particular dangers for man and environment:
- Classification system:
- NFPA ratings (scale 0 - 4)



Health = 2
Fire = 0
Reactivity = 0

- HMIS-ratings (scale 0 - 4)



Health = 2
Fire = 0
Reactivity = 0

- **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.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- **Substance**
- CAS No. Description
6283-63-2 N,N-Diethyl-1,4-phenylenediammonium sulfate
- Identification number(s)
- EC number: 228-500-6

4 First-aid measures

- **Description of first aid measures**
- General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
Supply fresh air.
Consult a doctor.
- After skin contact:
Wash skin with water or shower.
Take off contaminated clothing.

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Consult a doctor.
- After eye contact:
Rinse opened eye for several minutes under running water.
Remove contact lenses.
Consult an ophthalmologist.
- After swallowing:
Rinse out mouth and then drink plenty of water.
Consult a doctor.

- **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described on the labelling (see section 2.2) and/or in chapter 11.

- **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.
- For safety reasons unsuitable extinguishing agents: There are no extinguishing agent restrictions for this substance/mixture.

- **Special hazards arising from the substance or mixture**
Flammable.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Sulfur oxides (SOx)

- **Advice for firefighters**
- Protective equipment:
Stay in the danger zone only with self-contained breathing apparatus. Avoid skin contact by keeping a safe distance or wearing suitable protective clothing.
- Additional information Do not allow extinguishing water to enter the surface water or groundwater system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear personal protective equipment (see section 8).
Avoid formation of dust.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose of the collected material according to regulations.
Wash off residuals with water.
- Protective Action Criteria for Chemicals
- PAC-1: Substance is not listed.
- PAC-2: Substance is not listed.
- PAC-3: Substance is not listed.

- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

- **Precautions for safe handling** Wear personal protective equipment (see section 8)
- Information about protection against explosions and fires: No special measures required.

- **Conditions for safe storage, including any incompatibilities**
- Requirements to be met by storerooms and receptacles:
  No special requirements.
  Recommendation: Store in the original container.
- Information about storage in one common storage facility: No special requirements.
- Further information about storage conditions:
  Keep receptacle tightly sealed.
  Recommended storage temperature: 15 - 25 °C
  Protect from exposure to the light.

- **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: Not required.

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

- **General protective and hygienic measures:**
  Avoid contact with the eyes and skin.
  Take off contaminated clothing and wash it before reuse.
  Wash hands before breaks and at the end of work.

- Personal protective equipment:

- Breathing equipment:
  Required when dusts are formed.
  Recommended filter type: P2

- Protection of hands: Protective gloves
- Material of gloves
  - For full contact:
  Nitrile rubber, NBR
  Recommended material thickness: ≥ 0.11 mm
  Breakthrough time: 480 min

  - For splash contact:
  Nitrile rubber
  Recommended thickness of the material: ≥ 0.11 mm
  Breakthrough time: 480 min

  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- Eye protection: Safety goggles with side protection

- Body protection: Protective clothing

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• Limitation and supervision of exposure into the environment
Do not allow product to reach ground water, water course or sewage system, even in small quantities.

9 Physical and chemical properties

• **Information on basic physical and chemical properties**	
• General Information	
• Color:	Colorless
• Odor:	Odorless
• Melting point/Melting range:	184 – 186 °C (363.2 – 366.8 °F)
• Flammability:	Product is not flammable.
• Decomposition temperature:	No data available.
• pH-value:	2 – 2.2
• Solubility in / Miscibility with	
• Water:	Soluble.
• Partition coefficient (n-octanol/water):	No data available.
• Vapor pressure:	Not applicable.
• Vapor pressure:	
• Density:	No data available. Not determined.
• Relative density	No data available.
• **Other information**	
• Important information on protection of health and environment, and on safety.	
• Ignition temperature:	Product is not selfigniting.
• Danger of explosion:	Product does not present an explosion hazard.
• VOC content:	0.00 %

10 Stability and reactivity

• **Reactivity**
For flammable, organic substances and mixtures in general, the following applies: With a correspondingly fine distribution, a dust explosion capability can generally be assumed in a whirled-up state.

• **Chemical stability**
• Thermal decomposition / conditions to be avoided:
The product is chemically stable under normal ambient conditions (room temperature).

• **Possibility of hazardous reactions**

Violent reactions possible with:
Strong oxidizing agents

• **Conditions to avoid** No further relevant information available.

• **Incompatible materials:** No further relevant information available.

• **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

• **Information on toxicological effects**
• Acute toxicity: No quantitative toxicity data are available for this product.

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• Acute toxicity estimate of the mixture (ATE) - Calculation method:

• LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)		
Oral	LD50	497 mg/kg (Rat)
Dermal	LD50	1100 mg/kg

CAS: 6283-63-2 N,N-Diethyl-1,4-phenylenediammonium sulfate		
Oral	LD50	497 mg/kg (Rat) (Sicherheitsdatenblatt Fa. Merck)
Dermal	LD50	1100 mg/kg (ATE)

• Primary irritant effect:
• on the skin: No irritant effect.
• on the eye: No irritating effect.
• Sensitization: No sensitizing effects known.

• Additional toxicological information:

• Carcinogenic categories
• IARC (International Agency for Research on Cancer) Substance is not listed.
• NTP (National Toxicology Program) Substance is not listed.
• OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

• **Toxicity**
• Aquatic toxicity: No further relevant information available.

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

• **Bioaccumulative potential** No further relevant information available.

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

• **Results of PBT and vPvB assessment**
This product does not contain components classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in concentrations of 0.1% or higher.
• PBT: Not applicable.
• vPvB: Not applicable.

• **Other adverse effects**
• General notes:
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system.
• **Additional ecological information:**
• Additional ecological information:
• General notes:
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
• **Additional ecological information:**
Water hazard class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

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Trade name: DPD Reagent

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13 Disposal considerations

- **Waste treatment methods**
- Recommendation:
  Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

- Uncleaned packagings:
- Recommendation:
  Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
  Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

• **UN-Number** • DOT, ADR/RID, IMDG, IATA	Void
• **UN proper shipping name** • DOT, ADR/RID, IMDG, IATA	Void
• **Transport hazard class(es)** • DOT, ADR/RID, ADN, IMDG, IATA • Class	Void
• **Packing group** • DOT, ADR/RID, IMDG, IATA	Void
• **Environmental hazards:**	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.
• **Special precautions for user**	Not applicable.
• **UN "Model Regulation":**	Void

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  No further relevant information available.
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- Hazardous Air Pollutants Substance is not listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.

- Cancerogenity categories
- EPA (Environmental Protection Agency) Substance is not listed.

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- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.

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

16 Other information

- Date of preparation / last revision 01/08/2026 / 2
- Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
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NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3