

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 18.07.2018

Version number 8

Revision: 27.06.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: **Free Chlorine Indicator Solution, 473 mL**

_SDS valid from Batch: P08A

Catalog number: 530222, 4530222, 424488

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the preparation: Reagent for water analysis

1.3 Details of the supplier of the safety data sheet

Supplier:

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 231 94510-0
e-mail: sales@tintometer.de

Tintometer GmbH
Division AQUALYTIC®
Schleefstr. 12
44287 Dortmund
Made in Germany
www.aqualytic.de

phone: +49 231 94510-755
e-mail: sales@aqualytic.de

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@tintometer.com

Informing department:

e-mail: sds@tintometer.de
Product Safety Department

1.4 Emergency telephone number:

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05

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- **Signal word** Warning
- **Hazard statements**
 - H290 May be corrosive to metals.
- **Precautionary statements**
 - P234 Keep only in original packaging.
 - P280 Wear protective gloves/protective clothing/eye protection.
 - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
 - P311 Call a doctor.
 - P390 Absorb spillage to prevent material damage.
- **2.3 Other hazards** No further relevant information available.
- **Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** aqueous solution

- **Dangerous components:**

CAS: 6192-52-5 EINECS: 203-180-0 Index No: 016-030-00-2 Reg.nr.: 01-2119538811-39-XXXX	p-toluenesulphonic acid ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	5-10%
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- **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
 - Instantly wash with water and soap and rinse thoroughly.
 - Seek medical treatment.
- **After eye contact** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.
- **After swallowing**
 - Rinse out mouth and then drink 1-2 glasses of water.
 - Seek medical treatment.
- **4.2 Most important symptoms and effects, both acute and delayed:** irritations
- **4.3 Indication of any immediate medical attention and special treatment needed:**
 - If swallowed or in case of vomiting, danger of entering the lungs
 - Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
 - The product is not combustible.
 - Formation of toxic gases is possible during heating or in case of fire.
 - Sulphur oxides (SO_x)
- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained breathing apparatus.
 - Wear full protective suit.
- **Additional information**
 - Collect contaminated fire fighting water separately. It must not enter drains.
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Use breathing protection against the effects of fumes/dust/aerosol.
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Prevent material from reaching sewage system, holes and cellars.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Store away from metals.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from the effects of light.
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 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.

· DNELs

CAS: 6192-52-5 p-toluenesulphonic acid

Oral	DNEL	2.5 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	7.6 mg/kg (Worker / long-term /systemic effects)
		2.5 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	53.6 mg/m ³ (Worker / long-term /systemic effects)
		8.7 mg/m ³ (Consumer / long-term / systemic effects)

· PNECs

CAS: 6192-52-5 p-toluenesulphonic acid

PNEC	58 mg/l (Sewage treatment plant)
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PNEC	0.0073 mg/l (Marine water)
	0.073 mg/l (Fresh water)
	0.016 mg/kg (Soil)
	0.00577 mg/kg (Marine sediment)
	0.0577 mg/kg (Fresh water sediment)

8.2 Exposure controls

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 breathing protection against the effects of fumes/dust/aerosol.

• **Recommended filter device for short term use:** Filter P2

Protection of hands:

Protective gloves.

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

• **Body protection:** Protective work clothing.

• **Limitation and supervision of exposure into the environment:** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:

Form / Physical state:	Fluid
Colour:	Colourless

• Odour:	Odourless
• Odour threshold:	Not applicable

• pH-value at 20°C:	< 1
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• Melting point/Freezing point:	Not determined
• Initial boiling point and boiling range:	Not determined

• Flash point:	Not applicable
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• Flammability (solid, gas):	Not applicable.
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• Decomposition temperature:	>170°C (CAS 6192-52-5)
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• Auto-ignition temperature:	Product is not self-igniting.
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• Explosive properties:	Product is not explosive.
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• Flammability or explosive limits:	
• Lower:	Not applicable
• Upper:	Not applicable

• Oxidising properties:	none
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• Vapour pressure:	Not determined.
• Density at 20°C:	1.02 g/cm ³
• Relative density:	Not determined.
• Vapour density:	Not determined.
• Evaporation rate:	Not determined.

• Solubility(ies):	
• Water:	Fully miscible

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· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	> 90 %
Solids content:	< 10 %
· 9.2 Other information	.
· Metal corrosion rate:	acc. to "Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fifth revised Edition"
· steel:	29.32 mm/a

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 - Corrosive action on metals
 - Reacts with strong oxidizing agents
 - Reacts with acids and alkali (lyes).
- **10.4 Conditions to avoid** strong heating
- **10.5 Incompatible materials:** metals
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

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

· LD/LC50 values that are relevant for classification:

CAS: 6192-52-5 p-toluenesulphonic acid

Oral	LD50	2570 mg/kg (rat) (RTECS)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· Information on components:

CAS: 6192-52-5 p-toluenesulphonic acid

Sensitisation	OECD 406	(guinea pig: negative)
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- **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:

OECD 414: Teratogenicity testing
 OECD 473: Mutagenicity testing
 OECD 471, 474, 476, 487: Germ cell mutagenicity testing

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OECD 471	(negative)
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- **Additional toxicological information:** Other dangerous properties can not be excluded.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

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EC50 >500 mg/l/96h (Daphnia magna)
(anhydrous substance; IUCLID)

IC50 245 mg/l/96 h (Chlorella vulgaris)
(anhydrous substance; IUCLID)

LC50 >500 mg/l/96h (bluegill)
(anhydrous substance; IUCLID)

· 12.2 Persistence and degradability

CAS: 6192-52-5 p-toluenesulphonic acid

OECD 302 B 79 % / 25 d (readily eliminated from water) (Zahn-Wellens / EMPA Test)
(anhydrous substance)

· 12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 6192-52-5 p-toluenesulphonic acid

log Pow -0.62 (.) (calculated)

· 12.4 Mobility in soil

No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· 12.6 Other adverse effects

Harmful effect due to pH shift.
Avoid transfer into the environment.

· Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

· European waste catalogue

16 05 06* laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

· Uncleaned packagings:

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN-Number

· ADR, IMDG, IATA

UN2586

· 14.2 UN proper shipping name

· ADR

· IMDG, IATA

2586 ARYLSULPHONIC ACIDS, LIQUID
ARYLSULPHONIC ACIDS, LIQUID

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<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	
	
<ul style="list-style-type: none"> · Class · Label 	8 (C3) Corrosive substances. 8
<ul style="list-style-type: none"> · IMDG, IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	8 Corrosive substances. 8
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	
	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: 	
	No
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups · Stowage Category 	
	Warning: Corrosive substances. 80 F-A,S-B Acids B
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	
	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	
	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	3 E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	
	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

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

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· Relevant phrases

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

· Training hints Provide adequate information, instruction and training for operators.**· Abbreviations and acronyms:**

ICAO: International Civil Aviation Organisation

EC50: effective concentration, 50 percent (in vivo)

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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Met. Corr. 1: Corrosive to metals – Category 1

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

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

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

· Sources

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

RTECS (Registry of Toxic Effects of Chemical Substances)

IUCLID (International Uniform Chemical Information Database)