

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

Printing date 27.05.2024

Version number 10 (replaces version 9)

Revision: 27.05.2024

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

1.1 Product identifier

Product name: **MT2 - Multitreat TC & TS Titrant**

Catalog number: SDT491

1.2 Relevant identified uses of the substance or mixture and uses advised against

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

1.3 Details of the supplier of the safety data sheet

Supplier:

DTK Water
Part of the Tintometer® Group
14 Morris Close
Park Farm Industrial Estate
Wellingborough
Northamptonshire NN8 6XF
United Kingdom

phone: +44 (0)1604 686995
e-mail: orders@dtkwater.com

Informing department:

e-mail: sds@lovibond.com
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



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

Hazard pictograms



GHS09

Signal word Void

Hazard statements

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P391 Collect spillage.

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.

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Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients
3.2 Mixtures
Description: aqueous solution

Dangerous components:

CAS: 7722-64-7	potassium permanganate	0.25–<1%
EINECS: 231-760-3	 Ox. Sol. 2, H272;  Repr. 2, H361d; STOT RE 2, H373;  Skin Corr. 1C, H314;	
Index No: 025-002-00-9	 Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10);  Acute Tox. 4, H302	

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.

After eye contact

Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.

After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

In case of persistent symptoms consult doctor.

4.2 Most important symptoms and effects, both acute and delayed:

irritating effects possible

after swallowing of large amounts:

sickness

vomiting

gastric or intestinal trouble

4.3 Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

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.

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.

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

Advice for emergency responders: Protective equipment: see section 8

6.2 Environmental precautions:

Do not allow product to reach sewage system or water bodies.

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Inform respective authorities in case product reaches water or sewage system.
Dilute with much water.

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: No special precautions necessary if used correctly.

Hygiene measures:

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

Requirements to be met by storerooms and containers: Store in cool location.

Information about storage in one common storage facility: Not required.

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:

CAS: 7722-64-7 potassium permanganate

WEL (Great Britain)	Long-term value: 0.2* 0.05** mg/m ³ as Mn *inhalable fraction **respirable fraction
IOELV (European Union)	Long-term value: 0.2* 0.05** mg/m ³ as Mn; *inhalable, **respirable fraction

Regulatory information

WEL (Great Britain): EH40/2020
IOELV (European Union): (EU) 2019/1831

Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

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

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.

Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

Eye/face protection

Safety glasses
use against the effects of fumes / dust
Use safety glasses that have been tested and approved in accordance with government standards such as EN 166.

Hand protection

Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.

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- **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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Other skin protection (body protection):** Protective work clothing.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Environmental exposure controls** 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**
 - **Physical state** Fluid
 - **Form:** Solution
 - **Colour:** Violet
 - **Odour:** Odourless
 - **Odour threshold:** Not applicable.
 - **Melting point/Freezing point:** 0°C
 - **Boiling point or initial boiling point and boiling range** 100°C (CAS: 7732-18-5 water)
 - **Flammability** The product is not combustible.
 - **Explosive properties:** Product is not explosive.
 - **Lower and upper explosion limit**
 - Lower: Not applicable.
 - Upper: Not applicable.
 - **Flash point:** Not applicable.
 - **Auto-ignition temperature:** Not applicable.
 - **Decomposition temperature:** Not determined.
 - **pH** Slightly alkaline
 - **Kinematic viscosity** Not determined.
 - **Solubility**
 - **Water:** Fully miscible
 - **Partition coefficient n-octanol/water (log value)** Not applicable (mixture).
 - **Vapour pressure:** Not determined.
 - **Density and/or relative density**
 - **Density at 20°C:** 1 g/cm³
 - **Relative density:** Not determined.
 - **Relative gas density** Not determined.
 - **Particle characteristics** Not applicable (liquid).

9.2 Other information

- **Information with regard to physical hazard classes**
- **Corrosive to metals** Void
- **Other safety characteristics**
- **Oxidising properties:** none
- **Additional information**
- **Solids content:** < 1 %
- **Solvent content:**
- **Organic solvents:** 0 %
- **Water:** > 95 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability**
Stable at ambient temperature (room temperature).
sensitivity to light
- **10.3 Possibility of hazardous reactions**
Violent reactions possible with:

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The generally known reaction partners of water.

- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

· **LD/LC50 values that are relevant for classification:**

CAS: 7722-64-7 potassium permanganate

Oral	LD50	750 mg/kg (rat) (RTECS)
	LDLo	100 mg/kg (human) (IUCRID)
Dermal	LD50.	>2000 mg/kg (rat) (OECD 402) (ECHA; no death of animals at this concentration, limit test)

- **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.

· **Information on components:**

CAS: 7722-64-7 potassium permanganate

Irritation of skin	OECD 404	(rabbit: burns) Merck: Burns after prolonged exposure.
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- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS: 7722-64-7 potassium permanganate

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

· **Information on components:**

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

CAS: 7722-64-7 potassium permanganate

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Escherichia coli / Salmonella typhimurium)
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (Merck: rat, male and female, oral, bone marrow)

- **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.

· 11.2 Information on other hazards

- **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· **Other information**

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

CAS: 7722-64-7 potassium permanganateEC50 0.056 mg/l/48h (Daphnia magna)
(ECOTOX)EC50 0.41 mg/l/72h (Algal toxicity)
(ECOTOX)LC50 0.1 mg/l/96h (fish)
(Ictalurus catus / ECOTOX)

Other information:

The following applies to manganese ions: toxic to water organisms.
In flowing waters, depending on the mixture, moderate to high toxic effect.

12.2 Persistence and degradability

Other information:

Mixture of inorganic compounds.
Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

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

CAS: 7722-64-7 potassium permanganatelog Pow -1.73 (.) (calculated)
(Merck)

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 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Avoid transfer into the environment.

Water hazard:

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into soil.

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 07* discarded inorganic chemicals consisting of or containing hazardous substances

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 or ID number

ADR, IMDG, IATA

UN3082

14.2 UN proper shipping name

ADR

3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (POTASSIUM PERMANGANATE)

IMDG

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(POTASSIUM PERMANGANATE), MARINE POLLUTANT

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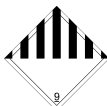

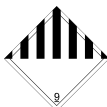

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· IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POTASSIUM PERMANGANATE)
· 14.3 Transport hazard class(es)	
· ADR	
 	
· Class	9 (M6) Miscellaneous dangerous substances and articles.
· Label	9
· IMDG, IATA	
 	
· Class	9 Miscellaneous dangerous substances and articles.
· Label	9
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: potassium permanganate
· Marine pollutant:	Yes
· Special marking (ADR):	Symbol (fish and tree)
· Special marking (IATA):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
· Kemler Number:	90
· EMS Number:	F-A,S-F
· Segregation groups	(SGG14) Permanganates
· Stowage Category	A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ):	E1
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	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

· Poisons Act UK

· Regulated explosives precursors

None of the ingredients is listed.

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· Regulated poisons	
None of the ingredients is listed.	
· Reportable explosives precursors	
None of the ingredients is listed.	
· Reportable poisons	
None of the ingredients is listed.	
· Regulation (EU) 2019/1148 on the marketing and use of explosives precursors not regulated	
· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)	
None of the ingredients is listed.	
· Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:	
None of the ingredients is listed.	
· Regulation (EC) No 273/2004 on drug precursors	
CAS: 7722-64-7	potassium permanganate 2B
· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors	
CAS: 7722-64-7	potassium permanganate 2
· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:	
None of the ingredients is listed.	
· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)	
None of the ingredients is listed.	
· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)	
None of the ingredients is listed.	
· Substances of very high concern (SVHC) according to REACH, Article 57	
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).	
· Substances of very high concern (SVHC) according to UK REACH	
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).	
· Directive 2012/18/EU (SEVESO III):	
· Named dangerous substances - ANNEX I None of the ingredients is listed.	
· Seveso category E2 Hazardous to the Aquatic Environment	
· Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t	
· Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t	
· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3	
· Information about limitation of use: Not required.	
· 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.
This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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

· **Relevant phrases**

H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

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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 relatif au transport international 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Ox. Sol. 2: Oxidizing solids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1C: Skin corrosion/irritation – Category 1C

Repr. 2: Reproductive toxicity – Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Sources

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

IUCLID (International Uniform Chemical Information Database)

RTECS (Registry of Toxic Effects of Chemical Substances)

ECOTOX Database

ECHA: European CHemicals Agency <http://echa.europa.eu>

* Data compared to the previous version altered.

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