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

Printing date 14.11.2023 Version number 10 (replaces version 9) Revision: 14.11.2023

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

· **1.1 Product identifier**

· **Product name: As 2 Reagent**

· **Catalog number:** 400720

· **CAS No.:**
141-82-2
· **Registration number** 01-2120115885-52-XXXX

· **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:**
Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com
phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom
phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **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**

GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard statements**
H319 Causes serious eye irritation.

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· **Precautionary statements**

P260	Do not breathe dust.
P280	Wear protective gloves / eye protection.
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.

· **2.3 Other hazards** No further relevant information available.

· **Results of PBT and vPvB assessment**
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.
· **Determination of endocrine-disrupting properties**
The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Designation:**
CAS: 141-82-2 malonic acid
· **Identification number(s):**
· **EC No:** 205-503-0

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 rinse with water.
· **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
after inhalation:
mucous membrane irritation
coughing
after swallowing:
irritations
gastric or intestinal trouble
cardiovascular disorders
· **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** Water, Carbon dioxide (CO_2), Foam, Fire-extinguishing powder
· **For safety reasons unsuitable extinguishing agents**
For this substance / mixture no limitations of extinguishing agents are given.
· **5.2 Special hazards arising from the substance or mixture**
combustible
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
acetic acid vapours
Carbon monoxide (CO) and carbon dioxide (CO_2)
· **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
Avoid breathing dust.
· **Advice for emergency responders:** Protective equipment: see section 8

· **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Collect mechanically.
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:**
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**
· **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.
Store under dry conditions.
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:** Not required.

· **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 safety glasses that have been tested and approved in accordance with government standards such as EN 166.
· **Hand protection**
Protective gloves.
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**
Breakthrough time: > 480 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**	Solid.
· **Form:**	Powder
· **Colour:**	White
· **Odour:**	Odourless
· **Odour threshold:**	Not applicable.
· **Melting point/Freezing point:**	132–135°C
· **Boiling point or initial boiling point and boiling range**	Not applicable. Decomposition
· **Flammability**	combustible
· **Explosive properties:**	Product is not explosive. However, formation of explosive air mixtures is possible. The following applies in general to flammable organic substances / preparations: Dust explosion possible if in powder or granular form (fine distribution), mixed with air.
· **Lower and upper explosion limit**	
Lower:	Not determined.
Upper:	Not determined.
· **Flash point:**	157°C (c.c.)
· **Auto-ignition temperature:**	Not applicable (solid).
· **Decomposition temperature:**	> 140°C
· **pH (10 g/l) at 20°C**	1.4
· **Kinematic viscosity**	Not applicable (solid).
· **Solubility**	
· **Water at 22°C:**	1390 g/l Readily soluble
· **Partition coefficient n-octanol/water (log value)**	-0.81 log Pow
· **Vapour pressure at 25°C:**	0.002 hPa
· **Density and/or relative density**	
· **Density at 20°C:**	1.62 g/cm³
· **Relative density:**	Not determined.
· **Relative gas density**	Not applicable (solid).
· **Particle characteristics**	Not determined.
· **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:**	100 %
· **Molecular formula**	$CH_2(COOH)_2$ (M=104.06 g/mol)

SECTION 10: Stability and reactivity

· **10.1 Reactivity**
Risk of dust explosion if enriched with fine dust in presence of air
Dust can combine with air to form an explosive mixture.

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· **10.2 Chemical stability**
Stable at ambient temperature (room temperature).
sensitive to moisture
· **10.3 Possibility of hazardous reactions**
Aqueous solution reacts acidic.
Aqueous solution reacts with metals.
Violent reactions with strong alkalis and oxidizing agents
· **10.4 Conditions to avoid** Strong heating (decomposition)
· **10.5 Incompatible materials:**
aluminium
Iron
· **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: 141-82-2 malonic acid		
Oral	LD50	2750 mg/kg (rat) (OECD 401) (Registrant, ECHA)
Inhalative	LC50	>8.9 mg/l/1h (rat) (RTECS, no deaths at this concentration)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Causes serious eye irritation.

· **Information on components:**		
CAS: 141-82-2 malonic acid		
Irritation of skin	OECD 404	(rabbit: slight irritation) (24h)
Irritation of eyes	OECD 405	(rabbit: irritation)

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **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:**	
CAS: 141-82-2 malonic acid	
OECD 471	(guinea pig: negative) (Bacterial Reverse Mutation Test - Ames test) (Salmonella typhimurium, National Toxicology Program)

· **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**
Other dangerous properties can not be excluded.
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: 141-82-2 malonic acid	
EC50	275 mg/l/48h (Daphnia magna) (ECOTOX)
LC50	150 mg/l (bluegill) (24h) (ECOTOX)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 141-82-2 malonic acid	
log Pow	-0.18 (.) (experimental)

· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.
· **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 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 08*	discarded organic 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**	Void
· **14.2 UN proper shipping name**	
· **ADR, IMDG, IATA**	Void
· **14.3 Transport hazard class(es)**	
· **ADR, IMDG, IATA**	
· **Class**	Void
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	Void
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.

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· **Transport/Additional information:** Not dangerous according to the above specifications.

*
SECTION 15: Regulatory information

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

· **Poisons Act UK**

· **Regulated explosives precursors**
Substance is not listed.

· **Regulated poisons**
Substance is not listed.

· **Reportable explosives precursors**
Substance is not listed.

· **Reportable poisons**
Substance is not 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)**
Substance is not listed.

· **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**
Substance is not listed.

· **Regulation (EC) No 273/2004 on drug precursors**
Substance is not listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**
Substance is not listed.

· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**
Substance is not listed.

· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**
Substance is not 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 ≥ 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 ≥ 0.1% (w / w).

· **Directive 2012/18/EU (SEVESO III):**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **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.

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure

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

· **Sources**
Data arise from safety data sheets, reference works and literature.
ECHA: European CHemicals Agency http://echa.europa.eu
ECOTOX Database
RTECS (Registry of Toxic Effects of Chemical Substances)

· *** Data compared to the previous version altered.**