

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

Printing date 31.10.2018

Version number 6

Revision: 31.10.2018

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

**1.1 Product identifier****Product name:** Iron LR**Catalog number:**

00515379BT, 515370BT, 4515370BT, 515371BT, 4515371BT, 515373BT, 4515373BT, 00515370BT, 00515371BT

**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: +49 231 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**

GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

**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**

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- **Signal word** Warning
- **Hazard-determining components of labelling:**  
calcium thioglycolate trihydrate
- **Hazard statements**  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.
- **Precautionary statements**  
P261 Avoid breathing dust.  
P280 Wear protective gloves / eye protection.  
P302+P352 IF ON SKIN: Wash with plenty of 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.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.
- **2.3 Other hazards** CAS 65208-41-5: Danger by skin resorption.
- **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:** Mixture of organic and inorganic compounds

- **Dangerous components:**

CAS: 124-04-9 EINECS: 204-673-3 Index No: 607-144-00-9 Reg.nr.: 01-2119457561-38-XXXX	adipic acid ⚠ Eye Irrit. 2, H319	30–40%
CAS: 65208-41-5 EINECS: 249-881-5	calcium thioglycolate trihydrate ⚠ Met. Corr. 1, H290; ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	1–≤2.5%
CAS: 28048-33-1 EINECS: 248-797-6	disodium 4,4'-[3-(pyridin-2-yl)-1,2,4-triazine-5,6-diyl]bis(benzenesulphonate) ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	≤2.5%

- **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 and call for doctor for safety reasons.
- **After skin contact**  
Instantly rinse with water.  
If skin irritation or rash occurs: Get medical advice/attention.
- **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.  
Seek immediate medical advice.
- **4.2 Most important symptoms and effects, both acute and delayed:**  
after swallowing:  
mucous membrane irritation  
thirst  
general feeling of sickness  
sickness  
after inhalation:  
irritations  
coughing  
breathing difficulty  
vomiting
- **Danger** risk of skin sensitization

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- **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**
  - combustible
  - Formation of toxic gases is possible during heating or in case of fire.
  - Can be released in case of fire:
    - nitrous gases
    - Sulphur oxides (SO<sub>x</sub>)
    - Nitrogen oxides (NO<sub>x</sub>)
    - Sodium oxide
    - hydrogen sulfide
- **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.
  - Avoid substance contact.
  - Ensure adequate ventilation
  - Avoid causing 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:** Thorough dedusting.
- **Hygiene measures:**
  - 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.
  - Unsuitable material for container: steel.
- **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.

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- 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:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **DNELs**  
Derived No Effect Level (DNEL)

**CAS: 124-04-9 adipic acid**

Oral	DNEL	19 mg/kg (Consumer / acute / systemic effects)
		19 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	38 mg/kg (Worker / acute / systemic effects)
		38 mg/kg (Worker / long-term / systemic effects)
		19 mg/kg (Consumer / acute / systemic effects)
		19 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	5 mg/m <sup>3</sup> (Worker / acute / local effects)
		264 mg/m <sup>3</sup> (Worker / acute / systemic effects)
		5 mg/m <sup>3</sup> (Worker / long-term / local effects)
		264 mg/m <sup>3</sup> (Worker / long-term / systemic effects)
		65 mg/m <sup>3</sup> (Consumer / acute / systemic effects)
		65 mg/m <sup>3</sup> (Consumer / long-term / systemic effects)

- **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.
- **PNECs**  
Predicted No Effect Concentration (PNEC)

**CAS: 124-04-9 adipic acid**

PNEC	59.1 mg/l (Sewage treatment plant)
	0.0126 mg/l (Marine water)
	0.46 mg/l (Aquatic intermittent release)
	0.126 mg/l (Fresh water)
PNEC	0.0228 mg/kg (Soil)
	0.0484 mg/kg (Marine sediment)
	0.484 mg/kg (Fresh water sediment)

- **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.
- **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:  $\geq 0.11$  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.

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- **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

· <b>9.1 Information on basic physical and chemical properties</b>	
· <b>Appearance:</b>	
Form / Physical state:	Tablets
Colour:	Yellow tint
· <b>Odour:</b>	Characteristic
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value at 20°C:</b>	3.5
· <b>Melting point/Freezing point:</b>	Not determined
· <b>Initial boiling point and boiling range:</b>	Not determined
· <b>Flash point:</b>	196°C (CAS 124-04-09)
· <b>Flammability (solid, gas):</b>	Not determined.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Product is not self-igniting.
· <b>Explosive properties:</b>	Product is not explosive.
· <b>Flammability or explosive limits:</b>	
Lower:	Not applicable
Upper:	Not applicable
· <b>Oxidising properties:</b>	none
· <b>Vapour pressure:</b>	Not applicable.
· <b>Density:</b>	Not determined
· <b>Relative density:</b>	Not determined.
· <b>Vapour density:</b>	Not applicable.
· <b>Evaporation rate:</b>	Not applicable.
· <b>Solubility(ies):</b>	
Water:	Soluble
· <b>Partition coefficient: n-octanol/water:</b>	Not applicable.
· <b>Viscosity:</b>	Not applicable.
· <b>kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
Organic solvents:	0.0 %
Solids content:	100.0 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** Dust can combine with air to form an explosive mixture.
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
  - Reacts with reducing agents
  - Reacts with alkali (lyes)
  - Reacts with oxidizing agents
  - Reacts with strong oxidizing agents
- **10.4 Conditions to avoid** Strong heating (decomposition)
- **10.5 Incompatible materials:**
  - metals
  - steel

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- **10.6 Hazardous decomposition products:**  
hydrogen sulphide  
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: 124-04-9 adipic acid**

Oral	LD50	5700 mg/kg (rat) (MERCK)
Dermal	LD50	>7940 mg/kg (rabbit) (Registrant, ECHA: no deaths occurred)
Inhalative	LC50	>7.7 mg/l/4h (rat) (dust, aerosol) (Registrant, ECHA: no deaths occurred)

##### **CAS: 65208-41-5 calcium thioglycolate trihydrate**

Oral	LD50	352 mg/kg (rat) (Merck)
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##### **CAS: 28048-33-1 disodium 4,4'-[3-(pyridin-2-yl)-1,2,4-triazine-5,6-diyl]bis(benzenesulphonate)**

	LD50	>5000 mg/kg (rat)
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- **Primary irritant effect:**
- **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: 124-04-9 adipic acid**

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)

##### **CAS: 65208-41-5 calcium thioglycolate trihydrate**

Irritation of skin	OECD 404	(rabbit: slight irritation)
Irritation of eyes	OECD 405	(rabbit: irritation)

- **Respiratory or skin sensitisation**  
May cause an allergic skin reaction.

#### • Information on components:

##### **CAS: 124-04-9 adipic acid**

Sensitisation	OECD 406	(guinea pig: negative) (IUCLID)
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##### **CAS: 65208-41-5 calcium thioglycolate trihydrate**

Sensitisation	OECD 429	(positive) (mouse)
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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

##### **CAS: 124-04-9 adipic acid**

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (IUCLID)
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OECD 474 (negative) (Mammalian Erythrocyte Micronucleus Test)

## SECTION 12: Ecological information

### • 12.1 Toxicity

#### • Aquatic toxicity:

##### **CAS: 124-04-9 adipic acid**

LC50	511 mg/l/48h (gold orfe)
EC50	86 mg/l/48h (Daphnia magna) (OECD 202)
IC50	31 mg/l/72h (Desmodemus subspicatus) (IUCLID)
LC50	97 mg/l/96h (fathhead minnow) (ECOTOX)

#### • Bacterial toxicity:

##### **CAS: 124-04-9 adipic acid**

EC50	92 mg/l (Pseudomonas putida) (DIN 38412) (IUCLID)
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### • 12.2 Persistence and degradability

##### **CAS: 124-04-9 adipic acid**

OECD 301 B	100 % / 28 d (readily biodegradable) (CO2 Evolution Test)
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• **Other information:** The following statements refer to the individual components.

### • 12.3 Bioaccumulative potential

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

##### **CAS: 124-04-9 adipic acid**

log Pow	0.081 (.) (25°C, OECD 107)
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• **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 product to reach ground water, water bodies or sewage system.  
Danger to drinking water if even 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 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
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#### • 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

Void

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· <b>14.2 UN proper shipping name</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.3 Transport hazard class(es)</b> · <b>ADR, IMDG, IATA</b> · <b>Class</b>	Void
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	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**

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

None of the ingredients is listed.

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

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Regulation (EU) No 649/2012**

None of the ingredients is listed.

· **National regulations**

· **Information about limitation of use:**

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC) .  
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.

· **Relevant phrases**

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

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

· **Abbreviations and acronyms:**

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)

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)

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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

Acute Tox. 4: Acute toxicity – Category 4

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

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

Skin Sens. 1: Skin sensitisation – Category 1

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

**• Sources**

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

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

IUCLID (International Uniform Chemical Information Database)

ECOTOX Database

**• \* Data compared to the previous version altered.**

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