

### Safety Data Sheet acc. to OSHA HCS (HazCom 2012)

Printing date 06/14/2017

Reviewed on 06/14/2017

#### 1 Identification

- **Product identifier**
- **Trade name:** Iron II LR
- **Catalogue number:** 00515421, (4)515420(BT), (4)515421(BT), 515423(0), 00515429
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**  
Tintometer Inc.  
6456 Parkland Drive  
Sarasota, FL 34243  
USA  
phone: (941) 756-6410  
fax: (941) 727-9654  
www.lovibond.us  
Made in Germany
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

#### \* 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P264 Wash thoroughly after handling.  
P280 Wear eye protection / face 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.  
P337+P313 If eye irritation persists: Get medical advice/attention.
- **Other hazards** No further relevant information available.

#### \* 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** mixture of organic compounds
- **Composition and Information on Ingredients:**

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CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9 RTECS: AU 8400000	adipic acid ◊ Eye Irrit. 2A, H319	10-20%
CAS: 28048-33-1 EINECS: 248-797-6 RTECS: DB7345000	disodium 4,4'-[3-(pyridin-2-yl)-1,2,4-triazine-5,6-diyl]bis(benzenesulphonate) ◊ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.1-≤2.5%

• **Additional information:** For the wording of the listed hazard phrases refer to section 16.

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**  
Supply fresh air.  
Seek medical treatment in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
- **After swallowing:**  
Rinse out mouth and then drink 1-2 glasses of water.  
Seek immediate medical advice.
- **Most important symptoms and effects, both acute and delayed**  
irritations  
coughing  
thirst  
general feeling of sickness
- **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.
- **Special hazards arising from the substance or mixture**  
Can burn in fire.  
Formation of toxic gases is possible during heating or in case of fire.  
nitrous gases  
Nitrogen oxides (NO<sub>x</sub>)  
Sulfur oxides (SO<sub>x</sub>)  
Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>)
- **Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Ambient fire may liberate hazardous vapours.

### 6 Accidental release measures

- **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
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Pick up mechanically.  
Dispose contaminated material as waste according to item 13.

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

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
- **Advice on safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of dust.
- **Hygiene measures:**  
Avoid contact with the eyes.  
Take off immediately all contaminated clothing.  
Wash hands before breaks and at the end of work.  
Do not eat, drink or smoke when using this product.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Unsuitable material for receptacle: steel.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Protect from heat and direct sunlight.  
Protect from exposure to the light.  
Store in dry conditions.  
Protect from humidity and water.
- **Recommended storage temperature:** 20 °C +/- 5 °C (approx. 68°F)
- **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:**

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

TLV (USA)	Long-term value: 5 mg/m <sup>3</sup>
EL (Canada)	Long-term value: 5 mg/m <sup>3</sup>
EV (Canada)	Long-term value: 5 mg/m <sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.
- **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 respiratory protective device against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P1
- **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  $\leq 1$  (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  
use against the effects of fumes / dust
- **Body protection:** Protective work clothing

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

### 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>Appearance:</b>	
Form / Physical state:	Tablets
Color:	Yellowish
· <b>Odor:</b> Odorless	
· <b>Odor threshold:</b> Not applicable.	
· <b>pH-value at 20 °C (68 °F):</b> 3.3	
· <b>Melting point/freezing point:</b> Not determined.	
· <b>Initial boiling point and boiling range:</b> Not determined.	
· <b>Flash point:</b> ~ 196 °C (~ 385 °F) (CAS 124-04-9)	
· <b>Flammability (solid, gas):</b> Not determined.	
· <b>Ignition temperature:</b> Not determined.	
· <b>Decomposition temperature:</b> Not determined.	
· <b>Auto-ignition temperature:</b> Product is not self-igniting.	
· <b>Danger of explosion:</b> Product does not present an explosion hazard.	
· <b>Flammability or explosive limits:</b>	
Lower:	Not applicable.
Upper:	Not applicable.
· <b>Oxidizing properties:</b> none	
· <b>Vapor Pressure:</b> Not applicable.	
· <b>Density:</b> Not determined.	
· <b>Relative density:</b> Not determined.	
· <b>Vapor 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>Solvent content:</b>	
Organic solvents:	0.0 %
Solids content:	100.0 %
· <b>Other information</b> No further relevant information available.	

### 10 Stability and reactivity

- **Reactivity** Dust can combine with air to form an explosive mixture.
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
  - Reacts with reducing agents.
  - Reacts with alkali (lyes).
  - Reacts with strong oxidizing agents.
  - Nitric acid
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:** steel
- **Hazardous decomposition products:** see section 5

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### \*11 Toxicological information

- **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: 28048-33-1 disodium 4,4'-[3-(pyridin-2-yl)-1,2,4-triazine-5,6-diyl]bis(benzenesulphonate)

Oral	LD50	> 5000 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** 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) (Registrant, ECHA)

- **Sensitization:** Based on available data, the classification criteria are not met.

#### · Information on components:

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

Sensitization	OECD 406	(guinea pig: negative) (IUCLID)
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#### · Carcinogenic categories

##### · IARC (International Agency for Research on Cancer)

CAS: 999-99-9	one or more ingredient(s) Group 3: Not classifiable as to carcinogenicity to humans
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##### · NTP (National Toxicology Program)

None of the ingredients is listed.

##### · OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

- **Other information:** see section 8 / 15

#### · Synergistic Products: None

- **CMR effects (carcinogenity, 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)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

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### 12 Ecological information

- **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 (Desmodesmus 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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- **Persistence and degradability**

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

OECD 301 B	100% / 28d (.) (CO2 Evolution Test)
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- **Other information:**

Quantitative data on the ecological effect of this mixture are not available.  
The following statements refer to the individual components.

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

- **Other adverse effects**

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

### 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

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

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA** none

- **UN proper shipping name**

- **DOT, IMDG, IATA** none

- **Transport hazard class(es)**

- **DOT, IMDG, IATA**

- **Class** none

- **Packing group**

- **DOT, IMDG, IATA** none

- **Environmental hazards:**

- **Marine pollutant:** No

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· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	Not dangerous according to the above specifications.

### \*15 Regulatory information

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

· <b>Section 355 (Extremely hazardous substances):</b>
None of the ingredients is listed.

· <b>Section 313 (Specific toxic chemical listings):</b>
None of the ingredients is listed.

· <b>TSCA (Toxic Substances Control Act):</b>
All ingredients are listed.

- **Proposition 65**

· <b>Chemicals known to cause cancer:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients is listed.

· <b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients is listed.

· <b>New Jersey Right-to-Know List:</b>
CAS: 124-04-9   adipic acid

· <b>New Jersey Special Hazardous Substance List:</b>
None of the ingredients is listed.

· <b>Pennsylvania Right-to-Know List:</b>
CAS: 124-04-9   adipic acid

· <b>Pennsylvania Special Hazardous Substance List:</b>
CAS: 124-04-9   adipic acid
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· <b>EPA (Environmental Protection Agency)</b>
None of the ingredients is listed.

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
None of the ingredients is listed.

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Date of preparation / last revision** 06/14/2017 / 16
- **Abbreviations and acronyms:**  
ICAO: International Civil Aviation Organisation  
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

ACGIH® - American Conference of Governmental Industrial Hygienists

•A1 - Confirmed human carcinogen

•A2 - Suspected human carcinogen

•A3 - Confirmed animal carcinogen with unknown relevance to humans

•A4 - Not classifiable as a human carcinogen

•A5 - Not suspected as a human carcinogen

IARC - International Agency for Research on Cancer

•Group 1 - Carcinogenic to humans

•Group 2A - Probably carcinogenic to humans

•Group 2B - Possibly carcinogenic to humans

•Group 3 - Not classifiable as to carcinogenicity to humans

•Group 4 - Probably not carcinogenic to humans

NTP - National Toxicology Program, U.S. Department of Health and Human Services

•Group K - Known to be Human Carcinogens

•Group R - Reasonably Anticipated to be Human Carcinogens

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

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

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

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>

RTECS (Registry of Toxic Effects of Chemical Substances )

ECOTOX Database

GESTIS- Stoffdatenbank (Substance Database, Germany)

IUCLID (International Uniform Chemical Information Database)

• \* Data compared to the previous version altered.