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

Printing date 05/12/2022 Reviewed on 05/12/2022

1 Identification

· **Product identifier**

· **Trade name: Acidifying GP**

· **Catalogue number:** 00515481, 515480BT, 4515480BT, 515481BT, 4515481BT, 00515480BT, 00515489BT

· **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 Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory 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-determining components of labeling:**
citric acid
· **Hazard statements**
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
· **Precautionary statements**

P280	Wear eye protection / face protection.
P264	Wash contaminated body parts thoroughly after handling.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a poison center/doctor if you feel unwell.
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

(Contd. on page 2)

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

Printing date 05/12/2022 Reviewed on 05/12/2022

Trade name: Acidifying GP

(Contd. of page 1)

· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 77-92-9 EINECS: 201-069-1 Index number: 607-750-00-3 RTECS: GE 7350000	citric acid Eye Irritation 2A, H319; Specific Target Organ Toxicity - Single Exposure 3, H335	50–60%
CAS: 124-04-9 EINECS: 204-673-3 Index number: 607-144-00-9 RTECS: AU 8400000	adipic acid Eye Irritation 2A, H319	20–30%

· **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; consult doctor in case of complaints.
· **After skin contact:**
Immediately rinse with plenty of water.
If skin irritation continues, consult a doctor.
· **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed**
irritations
after inhalation:
mucosal irritations, cough, breathing difficulty
after swallowing of large amounts:
gastric or intestinal disorders
vomiting
pain
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

*
5 Fire-fighting measures

· **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.
· **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.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Sulfur oxides (SOx)
Sodium oxide
Carbon monoxide (CO) and carbon dioxide (CO_2)
· **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.

(Contd. on page 3)

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

Printing date 05/12/2022 Reviewed on 05/12/2022

Trade name: Acidifying GP

(Contd. of page 2)

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
Avoid breathing dust.
· **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.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:**
Prevent formation of dust.
Provide suction extractors if dust is formed.
Keep ignition sources away - Do not smoke.
· **Hygiene measures:**
Do not inhale dust / smoke / mist.
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**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Unsuitable material for container: metals, metal alloys
· **Information about storage in one common storage facility:**
Store away from metals.
Store away from oxidizing agents.
· **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:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

CAS: 124-04-9 adipic acid	
TLV (USA)	Long-term value: 5 mg/m³
EL (Canada)	Long-term value: 5 mg/m³
EV (Canada)	Long-term value: 5 mg/m³

· **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.

(Contd. on page 4)

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

(Contd. of page 3)

· **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
· **Breathing equipment:** Use respiratory protective device against the effects of fume/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
Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).
· **Body protection:** Protective work clothing

· **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

· **Information on basic physical and chemical properties**	
· **Appearance:**	
· **Form / Physical state:**	Tablets
· **Color:**	White
· **Odor:**	Odorless
· **Odor threshold:**	Not applicable.
· **pH-value (9.5 g/l) at 20°C (68°F):**	2.4
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	196°C (384.8°F) (CAS 124-04-9)
· **Flammability (solid, gas):**	Can burn in fire.
· **Ignition temperature:**	Not applicable (solid).
· **Decomposition temperature:**	153°C (307.4°F) (CAS 77-92-9)
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
· **Flammability or explosive limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not applicable (solid).
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not applicable (solid).
· **Density at 20°C (68°F):**	1.46 g/cm³ (12.18 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not applicable.
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
· **Water:**	Soluble.
· **Partition coefficient (n-octanol/water):**	Not applicable (mixture).
· **Viscosity:**	
· **Kinematic:**	Not applicable (solid).
· **Other information**	
· **Solids content:**	100 %

10 Stability and reactivity

· **Reactivity** Dust can combine with air to form an explosive mixture.

(Contd. on page 5)

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

(Contd. of page 4)

· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
Aqueous solution reacts acidic.
Aqueous solution reacts with metals.
Reacts with alkali (lyes).
Reacts with reducing agents.
Reacts with oxidizing agents.
Citric acid: incompatible with bases, strong oxidizers, amines. Contact with metal nitrates may be explosive. Attacks aluminum, copper, zinc und their alloys, when wet.
· **Conditions to avoid** Strong heating (decomposition)
· **Incompatible materials:**
metals
steel
aluminum, copper, zinc, metal ions
combustible materials
· **Hazardous decomposition products:** see section 5

* 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: 77-92-9 citric acid		
Oral	LD50	3000 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rat) (limit test: there were no deaths)
CAS: 124-04-9 adipic acid		
Oral	LD50	5700 mg/kg (rat) (MERCK)
Dermal	LD50	>7940 mg/kg (rabbit) (Registrant, ECHA: no deaths occurred)

· **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:**
Citric acid: A single drop of a 2% or 5% solution in water causes little or no irritation.
A 0.5% solution held in contact with the eye causes irreversible tissue damage to the cornea.
Citric Acid caused mild irritation when 500 mg was tested on rabbit skin in a 24-hour test.
(CHEMINFO, Canadian Centre for Occupational Health and Safety)

CAS: 77-92-9 citric acid		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)
CAS: 124-04-9 adipic acid		
Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: severe irritations)

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

· **Information on components:**		
CAS: 77-92-9 citric acid		
Sensitization	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)
CAS: 124-04-9 adipic acid		
Sensitization	OECD 406	(guinea pig: negative) (IUCLID)

(Contd. on page 6)

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

(Contd. of page 5)

· **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

· **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** May cause respiratory irritation.
· **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: 77-92-9 citric acid	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)

CAS: 124-04-9 adipic acid	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (IUCLID)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

· **Additional toxicological information:**
CAS: 77-92-9 citric acid
. (source: GESTIS) Main toxic effects: Acute: Irritant effect on the eyes and upper respiratory tract; no evidence of systemic toxic effects under occupationally relevant exposure conditions chronic: irritative effects on mucous membranes and skin. Enamel damage, dermatitis (Merck) Further information: Depending on the pH value, dust or concentrated aqueous solutions are highly irritating to corrosive to the eye.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 77-92-9 citric acid	
EC50	~120 mg/l (Daphnia magna) (72 h) (IUCLID)
EC5	485 mg/l (Entosiphon sulcatum) (72h) (MERCK)
LC50	440–760 mg/l/96h (gold orfe) (IUCLID)
CAS: 124-04-9 adipic acid	
LC50	511 mg/l/48h (gold orfe)
EC50	86 mg/l/48h (Daphnia magna) (OECD 202)

(Contd. on page 7)

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

Printing date 05/12/2022 Reviewed on 05/12/2022

Trade name: Acidifying GP

(Contd. of page 6)

IC50	31 mg/l/72h (Desmodesmus subspicatus) (IUCLID)
LC50	97 mg/l/96h (fathhead minnow) (ECOTOX)

· **Bacterial toxicity:**

CAS: 77-92-9 citric acid	
EC5	>10000 mg/l (Pseudomonas putida) (16h (Lit.))

CAS: 124-04-9 adipic acid	
EC50	92 mg/l (Pseudomonas putida) (DIN 38412) (IUCLID)

· **Persistence and degradability**

CAS: 77-92-9 citric acid	
OECD 301 B	97 % / 28 d (readily biodegradable) (CO2 Evolution Test)
OECD 302 B	98 % / 2 d (readily eliminated from water) (Zahn-Wellens / EMPA Test)

CAS: 124-04-9 adipic acid	
OECD 301 B	100 % / 28 d (readily biodegradable) (CO2 Evolution Test)

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

CAS: 77-92-9 citric acid	
log Pow	-1.72 (.) (OECD 117, 20°C)

CAS: 124-04-9 adipic acid	
log Pow	0.081 (.) (25°C, OECD 107)

· **Mobility in soil** No further relevant information available.
· **Other adverse effects** Avoid transfer into the environment.

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**	none
· **IMDG, IATA**	none
· **Transport hazard class(es)**	
· **DOT, IMDG, IATA**	
· **Class**	none
· **Packing group**	
· **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

(Contd. on page 8)

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

Printing date 05/12/2022 Reviewed on 05/12/2022

Trade name: Acidifying GP

(Contd. of page 7)

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

* 15 Regulatory information

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

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**

CAS: 124-04-9	adipic acid

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**

CAS: 124-04-9	adipic acid

· **Pennsylvania Special Hazardous Substance List:**

CAS: 124-04-9	adipic acid	E

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

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

· **Information about limitation of use:** Not required.

· **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**
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

· **Date of preparation / last revision** 05/12/2022 / 83

· **Abbreviations and acronyms:**
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: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration

(Contd. on page 9)

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

Printing date 05/12/2022 Reviewed on 05/12/2022

Trade name: Acidifying GP

(Contd. of page 8)

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
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 & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Specific Target Organ Toxicity - Single Exposure 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
GESTIS- Stoffdatenbank (Substance Database, Germany)

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