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

Printing date 13.05.2024 Version number 84 (replaces version 83) Revision: 13.05.2024

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

· **1.1 Product identifier**

· **Product name: Acidifying GP**

· **Catalog number:** 00515481, 515480BT, 4515480BT, 515481BT, 4515481BT, 00515480BT, 00515489BT, SDT045

· **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.
STOT SE 3 H335 May cause respiratory irritation.

· **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**


GHS07

· **Signal word** Warning
· **Hazard-determining components of labelling:**
citric acid
· **Hazard statements**
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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Product name: Acidifying GP

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· **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.

· **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.

· **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:** Mixture of organic compounds.

· **Dangerous components:**

CAS: 77-92-9 EINECS: 201-069-1 Index No: 607-750-00-3 Reg.nr.: 01-2119457026-42-XXXX	citric acid	Eye Irrit. 2, H319; STOT SE 3, H335	50–60%
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	20–30%

· **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 rinse with 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 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:**
irritations
after inhalation:
mucosal irritations, cough, shortness of breath
after swallowing of large amounts:
gastric or intestinal trouble
vomiting
pain
· **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.

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Can be released in case of fire:
Nitrogen oxides (NOx)
Sulphur oxides (SOx)
Sodium oxide
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.
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:**
Do not inhale dust / smoke / mist.
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.
Unsuitable material for container: metals, metal alloys
· **Information about storage in one common storage facility:**
Store away from metals.
Store away from oxidising agents.
· **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.

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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/m³ (Worker / acute / local effects)
		264 mg/m³ (Worker / acute / systemic effects)
		5 mg/m³ (Worker / long-term / local effects)
		264 mg/m³ (Worker / long-term /systemic effects)
		65 mg/m³ (Consumer / acute / systemic effects)
		65 mg/m³ (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.

· **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.
· **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.

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· **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:**	Tablets
· **Colour:**	White
· **Odour:**	Odourless
· **Odour threshold:**	Not applicable.
· **Melting point/Freezing point:**	Not determined.
· **Boiling point or initial boiling point and boiling range**	Not determined.
· **Flammability**	combustible
· **Explosive properties:**	The product is not capable of dust explosion in the form supplied; enrichment with fine dust causes risk of dust explosion
· **Lower and upper explosion limit**	
Lower:	Not determined.
Upper:	Not applicable (solid).
· **Flash point:**	196°C (CAS 124-04-9, CAS: 124-04-9 adipic acid)
· **Auto-ignition temperature:**	Not applicable (solid).
· **Decomposition temperature:**	153°C (CAS 77-92-9)
· **pH (9.5 g/l) at 20°C**	2.4
· **Kinematic viscosity**	Not applicable (solid).
· **Solubility**	
· **Water:**	Soluble
· **Partition coefficient n-octanol/water (log value)**	Not applicable (mixture).
· **Vapour pressure:**	Not applicable (solid).
· **Density and/or relative density**	
· **Density at 20°C:**	1.46 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 %

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**
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 oxidising agents, amines. Contact with metal nitrates causes explosion hazard.
Attacks aluminium, copper, zinc and their alloys - in case of moisture.
· **10.4 Conditions to avoid** Strong heating (decomposition)
· **10.5 Incompatible materials:**
metals
steel
aluminium, copper, zinc, metal ions
combustible substances

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· **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: 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)

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

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

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

· **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: 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)

· **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.

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· **Information on likely routes of exposure**
Under workplace conditions, inhalative exposure is the main route of exposure of citric acid. Inhalative exposure is possible in the form of dust or aerosols of aqueous solutions, although the warning irritant effect means that inhalation of very high concentrations is only to be expected accidentally.
Irrespective of this, citric acid is mainly ingested orally with food. [GESTIS]

· **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.

· **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.

SECTION 12: Ecological information

· **12.1 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)
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)

· **12.2 Persistence and degradability**	
CAS: 77-92-9 citric acid	
OECD 301 B	97 % / 28 d (readily biodegradable) (CO_2 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) (CO_2 Evolution Test)

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

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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)

· **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.
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 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**	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.
· **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**
None of the ingredients is listed.

· **Regulated poisons**
None of the ingredients is listed.

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· **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**
None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
None of the ingredients is listed.

· **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 ≥ 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** None of the ingredients is 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.

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

· **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: 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)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)

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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
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
GESTIS- Stoffdatenbank (Substance Database, Germany)

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