according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Succinic acid 99,5 +% Foodgrade

article number: BS0934.1

Version: **2.0 en**Replaces version of: 2016-06-10

Version: (1)



date of compilation: 2016-06-10

Revision: 2021-04-26

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

1.1 Product identifier

Identification of the substance Succinic acid

Article number BS0934.1

Registration number(REACH) It is not required to list the identified uses be-

cause the substance is not subject to registration

: Department Health, Safety and Environment

according to REACH (< 1 t/a)

EC number 203-740-4 CAS number 110-15-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: laboratory chemical

laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Laboratoriumdiscounter Zandvoortstraat 75 1976BN Ijmuiden Nederland

Telephone: +31 (0) 255 700 210 e-mail: info@laboratoriumdiscounter.nl Website: www.laboratoriumdiscounter.nl

Competent person responsible for the safety data

sheet:

e-mail (competent person): info@laboratoriumdiscounter.nl

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons In- formation Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

Emergency information service

+49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance ormixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classifica	Classification acc. to GHS				
Section	Hazard class	Hazard class and cat- egory	Hazard state- ment		
3.3	serious eye damage/eye irritation	(Eye Dam. 1)	H318		

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Laboratoriumdiscounter

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word **Danger**

Pictograms

GHS05



Hazard statements

H318 Causes serious eye damage

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection.

Precautionary statements - response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)



H318 Causes serious eye damage.

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.

Immediately call a POISONCENTER/doctor. P310

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 **Substances**

Name of substance Succinic acid EC number 203-740-4 CAS number 110-15-6 Molecular formula C₄H₆O₄ 118,1 ⁹/_{mol} Molar mass

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SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a doctor if you feel unwell.

2. Most important symptoms and effects, both acute and delayed

Diarrhoea, Nausea, Vomiting, Irritation, Corrosion, Risk of serious damage to eyes, Risk of blindness

3. Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

2. Special hazards arising from the substance or mixture

Combustible. Vapours may form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO₂)

3. Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Do not breathe dust. Avoid contact with skin and eyes.

2. Environmental precautions

Keep away from drains, surface and ground water.

3. Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

4. Reference to other sections

Hazardous combustion products: see section 5. Personal protective equ ipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

1. Precautions for safe handling

Provision of sufficient ventilation. Avoid dust formation.

• Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work.

2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Ventilation requirements

Use local and general ventilation.

Specific designs for storagerooms or vessels

Recommended storage temperature: 15 - 25 °C.

3. Specific end use(s)

No information available.

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SECTION 8: Exposurecontrols/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Nota- tion	ldentifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [ppm]	Ceil- ing-C [mg/ m³]	Source
GB	dust		i	WEL	10				EH40/2005
GB	dust		r	WEL	4				EH40/2005

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur Inhalable fraction Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified)

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) TWA

Relevant DNELs/DMELs/PNECs and other threshold levels

· human health values

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	10 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	10 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	10 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	10 mg/m³	human, inhalatory	worker (industry)	acute - local effects
DNEL	71 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects
DNEL	67 mg/kg bw/ day	human, dermal	worker (industry)	acute - systemic effects

· environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	0,1 ^{mg} / _l	freshwater	short-term (single instance)
PNEC	0,01 ^{mg} / _l	marine water	short-term (single instance)
PNEC	3 mg/ _I	sewage treatment plant (STP)	short-term (single instance)
PNEC	0,079 ^{mg} / _{kg}	freshwater sediment	short-term (single instance)
PNEC	0,008 ^{mg} / _{kg}	marine sediment	short-term (single instance)
PNEC	0,018 ^{mg} /kg	soil	short-term (single instance)

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8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eve/face protection





Use safety goggle with side protection.

Skin protection



· hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a consider- able reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

· type of material

NBR (Nitrile rubber)

· material thickness

>0,11 mm

breakthrough times of the glove material

>480 minutes (permeation: level 6)

· other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state solid (powder, crystalline)

Colour white

Odour odourless

Odour threshold No data available

Other physical and chemical parameters

pH (value) 2,7 (water: 10 ⁹/_I, 20 °C)

Melting point/freezing point 185 – 191 °C

Initial boiling point and boiling range 235 °C Flash point 206 °C

Evaporation rate no data available

Flammability (solid, gas)

These information are not available

Explosive limits

lower explosion limit (LEL)
 upper explosion limit (UEL)
 Explosion limits of dust clouds
 this information is not available these information are not available This

Vapour pressure information is not available.

Density 1,564 ^g/_{cm³} at 15 °C

Vapour density This information is not available.

Bulk density ~ 940 kg/m³

Relative density Information on this property is not available.

Solubility(ies)

Water solubility 83.000 ^{mg}/_l at 25 °C

Partition coefficient

n-octanol/water (log KOW) -0,59 (Experimental data)

Auto-ignition temperature 470 °C

Decomposition temperature >235 °C

Viscosity not relevant (solid matter)

Explosive properties Shall not be classified as explosive

Oxidising properties none

9.2 Other information

Temperature class (EU, acc. to ATEX)

T1 (Maximum permissible surface temperature

on the equipment: 450°C)

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SECTION 10: Stability and reactivity

1. Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. In case of warming: Vapours can form explosive mixtures with air.

2. Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

3. Possibility of hazardous reactions

Violent reaction with: Alkalis, Strong oxidiser

4. Conditions to avoid

Keep away from heat. Decompostion takes place from temperatures above: >235 °C.

5. Incompatible materials

There is no additional information.

6. Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

Exposure rou	te Endpoint	Value	Species	Source
oral	LD50	2.260 ^{mg} / _{kg}	rat	TOXNET

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeatedexposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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Symptoms related to the physical, chemical and toxicological characteristics

· If swallowed

diarrhoea, nausea, vomiting, irritation

· If in eyes

Causes serious eye damage, risk of blindness

If inhaled

Inhalation of dust may cause irritation of the respiratory system

· If on skin

Frequently or prolonged contact with skin may cause dermal irritation

Other information

None

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	>100 ^{mg} / _I	fish	ECHA	96 h
EC50	>100 ^{mg} / _I	aquatic invertebrates	ECHA	48 h
ErC50	>100 ^{mg} / _I	algae	ECHA	72 h

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
EC50	>300 ^{mg} / _I	microorganisms	ECHA	3 h
growth (EbCx) 20%	>300 ^{mg} / _I	microorganisms	ECHA	3 h

12.2 Process of degradability

The substance is readily biodegradable. Theoretical Oxygen Demand: 0,9484 ^{mg}/_{mg} Theoretical Carbon Dioxide: 1,491 ^{mg}/_{mg}

Process	Degradation rate	Time
DOC removal	93,57 %	4 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms. n-

octanol/water (log KOW)

-0,59

12.4 Mobility in soil

Data are not available.

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5. Results of PBT and vPvBassessment

Data are not available.

6. Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/contain- er in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

2. Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

3. Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

1.	UN number	(not subject to transport regulations)
2.	UN proper shipping name	not relevant
3.	Transport hazardclass(es)	not relevant
	Class	-
4.	Packing group	not relevant not assigned to a packing group
5.	Environmental hazards	none (non-environmentally hazardous acc. to the danger- ous goods regulations)

6. Special precautions for user

There is no additional information.

7. Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

8. Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG)

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

Not subject to ICAO-IATA.

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SECTION 15: Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)
 - Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
 Not listed.
 - Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
 Not listed.
 - Regulation 850/2004/EC on persistent organic pollutants (POP)

Not listed.

Restrictions according to REACH, Annex XVII

not listed

Restrictions according to REACH, Title VIII

None.

- List of substances subject to authorisation (REACH, Annex XIV)/SVHC candidate list not listed
- Seveso Directive

2012/	2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes		
	not assigned				

Directive 75/324/EEC relating to aerosol dispensers

Filling batch

Deco-Paint Directive (2004/42/EC)

VOC content	100 %g 1.564 //		
Directive on industrial emissions (VOCs 2010/75/EII)			

Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content	0 %
VOC content	0 g/l

Directive 2011/65/EU on he restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed

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Regulation 111/2005/EC laying down rulesforthe monitoring of trade between the Community and third countries in drug precursors

not listed

National inventories

Substance is listed in the following national inventories:

Country	National inventories	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS Australian Inventory of Chemical Substances

CICR Chemical Inventory and Control Regulation
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)

Inventory of Existing Chemical Substances Produced or Imported in China National Inventory of Chemical Substances
Korea Existing Chemicals Inventory **IECSC**

KECI

NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances
REACH Reg. REACH registeredsubstances

Taiwan Chemical Substance Inventory

TSCA Toxic Substance Control Act

15.2 **Chemical Safety Assessment**

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
1.1	Registration number (REACH): This information is not available.	Registration number (REACH): It is not required to list the identified uses be- cause the substance is not subject to registra- tion according to REACH (< 1 t/a)	yes
2.1		Classification acc. to GHS: change in the listing (table)	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.1	Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16.		yes
2.2	Signal word: Warning	Signal word: Danger	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Warning	Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
8.1		•environmental values: change in the listing (table)	yes
14.4	Packing group: not relevant	Packing group: not relevant not assigned to a packing group	yes
14.8		•International Civil Aviation Organization (ICAO-IATA/DGR): Not subject to ICAO-IATA.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of atested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)

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Abbr. Descriptions of used abbreviations EINECS European Inventory of Existing Commercial Chemical Substances ELINCS European List of Notified Chemical Substances ErC50 ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA International Air Transport Association IATA/DGR Dangerous Goods Regulations (DGR) for the air transport (IATA) ICAO International Civil Aviation Organization IMDG International Maritime Dangerous Goods Code LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of atested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval MARPOL International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic PNEC Predicted No-Effect Concentration
ELINCS European List of Notified Chemical Substances ErC50
ErC50
growth (EbC50) or growth rate (ErC50) relative to the control GHS "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations IATA International Air Transport Association IATA/DGR Dangerous Goods Regulations (DGR) for the air transport (IATA) ICAO International Civil Aviation Organization IMDG International Maritime Dangerous Goods Code LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of atested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval MARPOL International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic
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IMDG International Maritime Dangerous Goods Code LC50 Lethal Concentration 50%: the LC50 corresponds to the concentration of atested substance causing 50 % lethality during a specified time interval LD50 Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval MARPOL International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic
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% lethality during a specified time interval Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval MARPOL International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic
specified time interval MARPOL International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic
NLP No-Longer Polymer PBT Persistent, Bioaccumulative and Toxic
PBT Persistent, Bioaccumulative and Toxic
PNEC Predicted No-Effect Concentration
ppm parts per million
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals
RID Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL short-term exposure limit
SVHC Substance of Very High Concern
TWA time-weighted average
VOC Volatile Organic Compounds
vPvB very Persistent and very Bioaccumulative

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU Regulation (EC) No. 1272/2008 (CLP, EUGHS)
 Dangerous Goods Regulations (DGR) for the air transport (IATA)

- International Maritime Dangerous Goods Code (IMDG)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H318	causes serious eye damage

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according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Succinic acid 99,5 +% Foodgrade

article number: BS0934.1



Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The in- formation cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily val- id for the new made-up material.

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