















<p>Hazard statements:</p> <p>Precautionary statements:</p>	<p>H319 Causes serious eye irritation.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337+P313 If eye irritation persists: Get medical advice/attention.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P501 Dispose of contents/container in accordance with local/regional/national/international regulations.</p>								
<p>2.3.) Other hazards</p> <p>Results of PBT and vPvB assessment:</p> <p>PBT: vPvB:</p>	<p>Not applicable. Not applicable.</p>								
<p>3.) <u>COMPOSITION/INFORMATION ON INGREDIENTS</u></p> <p>3.2.) Chemical characterization</p> <p>Description:</p> <p>Dangerous components:</p> <table><tr><td>CAS: 110-15-6 EINECS: 203-740-4</td><td>Succinic acid</td><td> Xi R41  Eye Dam. 1, H318</td><td>≤ 2,5%</td></tr><tr><td>CAS: 110-94-1 EINECS: 203-817-2</td><td>Glutaric acid</td><td> Xi R36  Eye Irrit. 2, H319</td><td>≤ 2,5%</td></tr></table> <p>Additional information: For the wording of the listed risk phrases refer to section 16.</p>	CAS: 110-15-6 EINECS: 203-740-4	Succinic acid	 Xi R41  Eye Dam. 1, H318	≤ 2,5%	CAS: 110-94-1 EINECS: 203-817-2	Glutaric acid	 Xi R36  Eye Irrit. 2, H319	≤ 2,5%	<p>Mixtures</p> <p>Aqueous solution.</p>
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CAS: 110-94-1 EINECS: 203-817-2	Glutaric acid	 Xi R36  Eye Irrit. 2, H319	≤ 2,5%						
<p>4.) <u>FIRST AID MEASURES</u></p> <p>4.1.) Description of first aid measures</p> <p>General information:</p> <p>After inhalation:</p> <p>After skin contact:</p>	<p>Remove contaminated clothing.</p> <p>Supply fresh air; consult doctor in case of symptoms.</p> <p>Wash with soap and water. If skin irritation continues, consult a doctor.</p>								



<p>After eye contact:</p> <p>After swallowing:</p> <p>4.2.) Most important symptoms and effects, both acute and delayed</p> <p>4.3.) Indication of any immediate medical attention and special treatment needed</p>	<p>Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. Use eye protection. Remove contact lenses, if present and easy to do.</p> <p>Rinse out mouth and then drink plenty of water. In case of persistent symptoms consult doctor.</p> <p>No further relevant information available.</p> <p>Symptomatic treatment.</p>
<p>5.) <u>FIREFIGHTING MEASURES</u></p> <p>5.1.) Extinguishing media</p> <p>Suitable extinguishing agents:</p> <p>For safety reasons unsuitable extinguishing agents:</p> <p>5.2.) Special hazards arising from the substance or mixture</p> <p>5.3.) Advice for firefighters</p> <p>Protective equipment:</p> <p>Additional information:</p>	<p>Product does not burn – take extinguishing measures according to fire conditions. Carbon dioxide (CO₂), extinguishing powder or water spray/fog. Fight larger fires with water spray/fog or alcohol-resistant foam.</p> <p>Water with a full water jet.</p> <p>Carbon monoxide (CO) and Carbon dioxide (CO₂).</p> <p>Wear self-contained breathing apparatus.</p> <p>Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.</p>
<p>6.) <u>ACCIDENTAL RELEASE MEASURES</u></p> <p>6.1.) Personal precautions, protective equipment and emergency procedures</p> <p>6.2.) Environmental precautions</p> <p>6.) Methods and material for containment and cleaning up</p> <p>6.4.) Reference to other sections</p>	<p>Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.</p> <p>Do not allow to enter drainage system, surface or ground water. Do not allow to enter the ground/soil.</p> <p>Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Send for recovery or disposal in suitable containers. Dispose of the material collected according to regulations. Ensure adequate ventilation.</p> <p>See Section 8 for information on personal protection equipment.</p>



<p>7.) <u>HANDLING AND STORAGE</u></p> <p>7.1.) Precautions for safe handling</p> <p>Information about protection against explosions and fires:</p> <p>7.2.) Conditions for safe storage, including any incompatibilities</p> <p><u>STORAGE</u> Requirements to be met by storerooms and containers:</p> <p>Information about storage in one common storage facility:</p> <p>Further information about storage conditions:</p> <p>7.3.) Specific end use(s)</p>	<p>Ensure good ventilation/exhaustion at the workplace. Avoid contact with eyes. Avoid prolonged or repeated skin contact. Wear personal protection equipment. Do not breathe vapour/spray.</p> <p>The product is not flammable.</p> <p>Observe all local and national regulations for storage of water polluting products.</p> <p>Store away from foodstuffs.</p> <p>Keep container tightly sealed. Protect from heat and direct sunlight. Protect from frost. Minimum storage temperature: 3°C.</p> <p>No further relevant information available.</p>
<p>8.) <u>EXPOSURE CONTROLS/PERSONAL PROTECTION</u></p> <p>Additional information about design of technical systems:</p> <p>8.1.) Control parameters</p> <p>Components with critical values that require monitoring at the workplace:</p> <p>Additional information:</p> <p>8.2.) Exposure controls</p> <p>Personal protective equipment:</p> <p>General protective and hygienic measures:</p> <p>Breathing equipment::</p> <p>Protection of hands:</p>	<p>No further data; see item 7.</p> <p>The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.</p> <p>The lists that were valid during the compilation were used as basis.</p> <p>Keep away from foodstuffs, beverages and food. Instantly remove any contaminated garments. Do not inhale gases / fumes / aerosols. Avoid contact with the eyes. Avoid close or long term contact with the skin. Wash hands during breaks and at the end of the work. Use skin protection cream for preventive skin protection.</p> <p>Not necessary if room is well-ventilated. If all workplace limits are observed and good ventilation is ensured, no special precautions necessary.</p> <p>Protective gloves. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.</p>



<p>Eye protection:</p> <p>Body protection:</p> <p>Limitation and supervision of exposure into the environment</p>	<p>The glove material has to be impermeable and resistant to the product / the substance / the preparation.</p> <p>Check the permeability prior to each renewed use of the glove.</p> <p>To avoid skin problems reduce the wearing of gloves to the required minimum.</p> <p><u>Material of gloves</u> Nitrile rubber - NBR Recommended thickness of the material $\geq 0,11$ mm The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p><u>Penetration time of glove material</u> Penetration time: ≥ 8 hours Protective gloves should be replaced at first signs of wear. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.</p> <p>Tightly sealed safety glasses.</p> <p>Light weight protective clothing. Body protection must be chosen depending on activity and possible exposure.</p> <p>Do not allow to enter drainage system, surface or ground water.</p>
<p>9.) <u>PHYSICAL AND CHEMICAL PROPERTIES</u></p> <p>9.1.) Information on basic physical and chemical properties</p> <p><u>General information</u> Appearance: Form: Colour: Smell: Odour threshold:</p> <p>pH-value:</p> <p><u>Change in condition</u> Melting point/Melting range: Boiling point/Boiling range:</p> <p>Flash point: Inflammability (solid, gaseous): Ignition temperature: Decomposition temperature: Self-inflammability: Danger of explosion: Critical values for explosion, lower: Critical values for explosion, upper:</p>	<p>liquid colourless to yellowish odourless not applicable</p> <p>not determined</p> <p>not determined ~ 100°C</p> <p>not applicable not applicable not determined not determined Product is not selfigniting. Product is not explosive. not applicable not applicable</p>



<p>Oxidizing properties: Vapour pressure: Density at 24 °C: Relative density: Vapour density (AIR = 1): Evaporation rate: Solubility in / Miscibility with water:</p> <p>Partition coefficient (n-octanol/water): Viscosity dynamic: Viscosity kinematic:</p>	<p>not classified as oxidising not determined 0,999 – 1,001 g/cm³ not determined not determined not determined not determined fully miscible</p> <p>not determined not determined not determined</p>															
<p>9.2.) Other information</p>	<p>No further relevant information available.</p>															
<p>10.) <u>STABILITY AND REACTIVITY</u></p> <p>10.1.) Reactivity</p> <p>10.2.) Chemical stability</p> <p>Thermal decomposition / conditions to be avoided:</p> <p>10.3.) Possibility of hazardous reactions</p> <p>10.4.) Conditions to avoid</p> <p>10.5.) Incompatible materials</p> <p>10.6.) Hazardous decomposition products</p>	<p>No further relevant information available.</p> <p>No decomposition if used according to specifications.</p> <p>No dangerous reactions known.</p> <p>No further relevant information available.</p> <p>Strong oxidizing agents.</p> <p>Carbon monoxide (CO) and Carbon dioxide (CO₂).</p>															
<p>11.) <u>TOXICOLOGICAL INFORMATION</u></p> <p>11.1.) Information on toxicological effects</p> <p>Acute toxicity:</p> <p>LD/LC50 values that are relevant for classification:</p> <table><tr><td colspan="3">110-15-6 Succinic acid</td></tr><tr><td>Oral</td><td>LD50</td><td>2260 mg/kg (rat)</td></tr><tr><td>Dermal</td><td>LD50</td><td>1000 mg/kg (guinea pig)</td></tr></table> <table><tr><td colspan="3">110-94-1 Glutaric acid</td></tr><tr><td>Oral</td><td>LD50</td><td>6000 mg/kg (mouse)</td></tr></table> <p><u>Primary irritant effect</u></p> <p>on the skin:</p> <p>on the eye:</p> <p>Subacute to chronic toxicity:</p> <p>Additional toxicological information:</p>	110-15-6 Succinic acid			Oral	LD50	2260 mg/kg (rat)	Dermal	LD50	1000 mg/kg (guinea pig)	110-94-1 Glutaric acid			Oral	LD50	6000 mg/kg (mouse)	<p>No irritant effect known.</p> <p>Causes serious eye irritation.</p> <p>no data / no sufficient data available.</p> <p>When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.</p>
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<p>Sensitisation:</p> <p>Repeated dose toxicity:</p> <p>CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):</p>	<p>No sensitizing effect known.</p> <p>According to information currently no known toxic effects.</p> <p>According to present knowledge no CMR-effects known.</p>												
<p>12.) ECOLOGICAL INFORMATION</p> <p>12.1.) Toxicity</p> <p>Aquatic toxicity:</p> <table border="1"> <tr> <td colspan="2">110-15-6 Succinic acid</td></tr> <tr> <td>EC50/48 h</td><td>374,2 mg/l (water flea (daphnia magna))</td></tr> </table> <table border="1"> <tr> <td colspan="2">110-94-1 Glutaric acid</td></tr> <tr> <td>EC10/16 h</td><td>63 mg/l (pseudomonas putida)</td></tr> <tr> <td>EC50/48 h</td><td>88,4 mg/l (water flea (daphnia magna))</td></tr> <tr> <td>IC50/96 h</td><td>35 mg/l (algae (Desmodesmus subspicatus))</td></tr> </table>	110-15-6 Succinic acid		EC50/48 h	374,2 mg/l (water flea (daphnia magna))	110-94-1 Glutaric acid		EC10/16 h	63 mg/l (pseudomonas putida)	EC50/48 h	88,4 mg/l (water flea (daphnia magna))	IC50/96 h	35 mg/l (algae (Desmodesmus subspicatus))	
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<p>12.2.) Persistence and degradability</p> <p>Other information:</p>	<p>No further relevant information available.</p> <p>The product is easily biodegradable.</p>												
<p>12.3.) Bioaccumulative potential</p>	<p>No further relevant information available.</p>												
<p>12.4.) Mobility in soil</p> <p>Additional ecological information</p> <p>Chemical Oxygen Demand (COD-value):</p> <p>Biochemical Oxygen Demand (BOD5-value):</p> <p>According to recipe contains the following heavy metals and compounds according to EC guideline NO. 76/464 EC:</p> <p>General notes:</p> <p>Water hazard class 1 (Self-assessment):</p>	<p>No further relevant information available.</p> <p>Not determined.</p> <p>Not determined.</p> <p>The product does not contain heavy metals.</p> <p>slightly hazardous for water.</p>												
<p>12.5.) Results of PBT and vPvB assessment</p> <p>PBT:</p> <p>vPvB:</p>	<p>Not applicable.</p> <p>Not applicable.</p>												
<p>12.6.) Other adverse effects</p>	<p>No further relevant information available.</p>												



<p>13.) <u>DISPOSAL CONSIDERATIONS</u></p> <p>13.1.) Waste treatment methods</p> <p>Recommendation:</p> <p>Waste disposal key number:</p> <p>European waste catalogue:</p> <p>Uncleaned packaging's:</p> <p>Recommendation:</p> <p>Recommended cleaning agent:</p>	<p>Disposal must be made according to official regulations.</p> <p>According to local/national regulations.</p> <p>Waste disposal key numbers from EWC have to be assigned depending on origin and processing. For that reason waste disposal key numbers different from that listed below may be possible.</p> <p>16 10 01 aqueous liquid wastes containing dangerous substances</p> <p>Disposal must be made according to official regulations. Water, if necessary with cleaning agent.</p>
<p>14.) <u>TRANSPORT INFORMATION</u></p> <p>14.1.) UN-Number ADR, IMDG, IATA</p> <p>14.2.) UN proper shipping name ADR, IMDG, IATA</p> <p>14.3.) Transport hazard class(es) ADR, IMDG, IATA Class</p> <p>14.4.) Packing group ADR, IMDG, IATA</p> <p>14.5.) Special precautions for user</p> <p>14.6.) Transport in bulk according to Annex II of MARPOL 73/78 and the IBC-Code</p> <p>Transport/Additional information:</p> <p>UN „Model Regulation“:</p>	<p>Void.</p> <p>Void.</p> <p>Void.</p> <p>Void.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not dangerous according to the above specifications.</p> <p>-</p>
<p>15.) <u>REGULATORY INFORMATION</u></p> <p>15.1.) Safety, health and environmental regulations/legislation specific for the substance or mixture</p> <p><u>National regulations</u></p> <p>Information about limitation of use:</p> <p>Decree to be applied in case of technical fault:</p>	<p>Employment restrictions concerning young persons must be observed.</p> <p>Directive 96/82/EC does not apply.</p>



<p>Water hazard class:</p> <p>Other regulations, limitations and prohibitive regulations</p> <p>Substances of very high concern (SVHC) according to REACH, Article 57:</p> <p>15.2.) Chemical safety assessment</p>	<p>Water hazard class 1 (Self-assessment): slightly hazardous for water.</p> <p>This mixture does not contain any substances, that are included in the candidate list for eventual authorisation.</p> <p>A chemical Safety Assessment has not been carried out.</p>																										
<p>16.) <u>OTHER INFORMATION</u></p> <p>Reasons for changes:</p> <p>Relevant phrases:</p> <p>Department issuing MSDS:</p> <p>Abbreviations and acronyms:</p> <p>Sources:</p> <p>Data compared to the previous version altered:</p> <p>Revision date:</p> <p>Version:</p>	<p>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.</p> <p>The Material Safety Data Sheet has been revised. Changes in classification and labelling.</p> <table border="0"> <tr> <td>H318</td><td>Causes serious eye damage.</td></tr> <tr> <td>H319</td><td>Causes serious eye irritation.</td></tr> <tr> <td>R36</td><td>Irritating to eyes.</td></tr> <tr> <td>R41</td><td>Risk of serious damage to eyes.</td></tr> </table> <table border="0"> <tr> <td>ADR</td><td>Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).</td></tr> <tr> <td>IMDG:</td><td>International Maritime Code for Dangerous Goods.</td></tr> <tr> <td>IATA</td><td>International Air Transport Association.</td></tr> <tr> <td>GHS</td><td>Globally Harmonized System of Classification and Labelling of Chemicals.</td></tr> <tr> <td>EINECS</td><td>European Inventory of Existing Commercial Chemical Substances.</td></tr> <tr> <td>ELINCS</td><td>European List of Notified Chemical Substances.</td></tr> <tr> <td>CAS</td><td>Chemical Abstracts Service (division of the American Chemical Society).</td></tr> <tr> <td>LC50</td><td>Lethal concentration, 50 percent</td></tr> <tr> <td>LD50</td><td>Lethal dose, 50 percent.</td></tr> </table> <p>These data are based on information submitted by pre-suppliers.</p> <p>20.03.2016 / 19.04.2016 / 08.06.2016</p> <p>4</p>	H318	Causes serious eye damage.	H319	Causes serious eye irritation.	R36	Irritating to eyes.	R41	Risk of serious damage to eyes.	ADR	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).	IMDG:	International Maritime Code for Dangerous Goods.	IATA	International Air Transport Association.	GHS	Globally Harmonized 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).	LC50	Lethal concentration, 50 percent	LD50	Lethal dose, 50 percent.
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