

Safety Data Sheet

according to UK REACH Regulation

SAC3-GF3+; SAC3-HF3+; SAC3-XF3+; SAC4-XF3+

Revision date: 18.06.2021

Product code: 950608

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

1.1. Product identifier

SAC3-GF3+; SAC3-HF3+; SAC3-XF3+; SAC4-XF3+

Further trade names

This MSDS covers the following products:

SAC3-GF3+

SAC3-HF3+

SAC3-XF3+

SAC4-XF3+

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

Use of the substance/mixture

Solder paste lead free

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name:	Cobar Europe BV	
Street:	Aluminiumstraat 2	
Place:	4823 AL Breda	
Telephone:	+31 76 5445566	Telefax: +31 76 5445577
e-mail:	info@Cobar.com	

Supplier

Company name:	Balver Zinn Josef Jost GmbH & Co. KG	
Street:	Blintroper Weg 11	
Place:	D-58802 Balve	
Telephone:	+49 2375 915-0	Telefax: +49 2375 915-114
Responsible Department:	cia@BalverZinn.com	

1.4. Emergency telephone number:

+49 (0) 700 24 112 112 (Contract-ID:BZW)
from USA/Canada pls call 011 49 700 24 112 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Hazard categories:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Hazard Statements:

Causes skin irritation.

Causes serious eye irritation.

2.2. Label elements

GB CLP Regulation

Signal word: Warning

Pictograms:



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Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
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.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Special labelling of certain mixtures

EUH208 Contains Resin acids and Rosin acids, fumarated, esters with glycerol. May produce an allergic reaction.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Contains: Silver (2-5%) Industrial use resulting in inclusion into or onto a matrix.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7440-31-5	tin			75-85 %
	231-141-8		01-2119486474-28	
65997-06-0	hydrogenated rosin			5-10 %
	266-041-3		01-2119487113-41	
2687-94-7	N-(n-octyl)-2-pyrrolidone			1-5 %
	403-700-8	613-098-00-0	01-0000015335-74	
	Skin Corr. 1B, Aquatic Chronic 2; H314 H411			
7440-50-8	copper			0,2-1 %
	231-159-6		01-2119480154-42	
124-04-9	adipic acid			<0,5 %
	204-673-3	607-144-00-9	01-2119457561-38	
	Eye Irrit. 2; H319			
97489-11-7	Resin acids and Rosin acids, fumarated, esters with glycerol			<0,5 %
	307-051-0		01-2119965167-29	
	Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 4; H319 H317 H413			
110-15-6	succinic acid			<0,5 %
	203-740-4		01-2119896114-34	
	Eye Dam. 1; H318			

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Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7440-31-5	231-141-8	tin	75-85 %
		inhalation: LC50 = (>4,75) mg/l (dusts or mists); dermal: LD50 = >2000 mg/kg; oral: LD50 = >2000 mg/kg	
65997-06-0	266-041-3	hydrogenated rosin	5-10 %
		dermal: LD50 = (>2000) mg/kg; oral: LD50 = >5000 mg/kg	
2687-94-7	403-700-8	N-(n-octyl)-2-pyrrolidone	1-5 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 2050 mg/kg	
7440-50-8	231-159-6	copper	0,2-1 %
		inhalation: LC50 = >5,11 mg/l (dusts or mists)	
124-04-9	204-673-3	adipic acid	<0,5 %
		inhalation: LC50 = > 7,7 mg/l (dusts or mists); dermal: LD50 = 5010 mg/kg; oral: LD50 = 5560 mg/kg	
97489-11-7	307-051-0	Resin acids and Rosin acids, fumarated, esters with glycerol	<0,5 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = >2000 mg/kg	
110-15-6	203-740-4	succinic acid	<0,5 %
		oral: LD50 = 2260 mg/kg	

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex, if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex. (EC 1272/2008 I 1.3.4.1)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of respiratory tract irritation, consult a physician.

After contact with skin

Gently wash with plenty of soap and water. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse cautiously with water for several minutes. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂).

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Safe handling: see section 7

For non-emergency personnel

Personal protection equipment: see section 8

For emergency responders

No special measures are necessary.

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear suitable protective clothing. See section 8.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

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Hints on joint storage

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances. Food and animal feedingstuff.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Recommended storage temperature: 20°C

Protect against: frost. UV-radiation/sunlight. heat. Humidity

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7440-50-8	Copper, dusts and mists (as Cu)	-	1		TWA (8 h)	WEL
		-	2		STEL (15 min)	WEL
7440-50-8	Copper, fume	-	0.2		TWA (8 h)	WEL

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
7440-31-5	tin			
Consumer DNEL, long-term		inhalation	systemic	3,476 mg/m ³
Consumer DNEL, acute		inhalation	systemic	3,476 mg/m ³
Worker DNEL, long-term		inhalation	systemic	11,75 mg/m ³
Worker DNEL, acute		inhalation	systemic	11,75 mg/m ³
Consumer DNEL, long-term		dermal	systemic	80 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	133,3 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	80 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	133,3 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	80 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	80 mg/kg bw/day
65997-06-0	hydrogenated rosin			
Consumer DNEL, long-term		dermal	systemic	10 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	17 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	35 mg/m ³
Worker DNEL, long-term		inhalation	systemic	117 mg/m ³
Consumer DNEL, long-term		oral	systemic	10 mg/kg bw/day
2687-94-7	N-(n-octyl)-2-pyrrolidone			
Worker DNEL, long-term		inhalation	systemic	18,52 mg/m ³
7440-50-8	copper			
Worker DNEL, acute		dermal	systemic	273 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	273 mg/kg bw/day

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Consumer DNEL, acute	inhalation	systemic	20 mg/m ³
Worker DNEL, long-term	inhalation	local	1 mg/m ³
Consumer DNEL, long-term	dermal	systemic	137 mg/kg bw/day
Worker DNEL, long-term	dermal	systemic	137 mg/kg bw/day
Worker DNEL, acute	inhalation	systemic	20 mg/m ³
Consumer DNEL, long-term	inhalation	local	1 mg/m ³
124-04-9	adipic acid		
Worker DNEL, acute	inhalation	systemic	264 mg/m ³
Worker DNEL, acute	inhalation	local	5 mg/m ³
Consumer DNEL, long-term	inhalation	systemic	65 mg/m ³
Worker DNEL, long-term	dermal	systemic	38 mg/kg bw/day
Consumer DNEL, acute	inhalation	systemic	65 mg/m ³
Worker DNEL, acute	dermal	systemic	38 mg/kg bw/day
Consumer DNEL, long-term	dermal	systemic	19 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	19 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	19 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	19 mg/kg bw/day
Worker DNEL, long-term	inhalation	local	5 mg/m ³
Worker DNEL, long-term	inhalation	systemic	264 mg/m ³
97489-11-7	Resin acids and Rosin acids, fumarated, esters with glycerol		
Worker DNEL, long-term	dermal	systemic	4 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	9 mg/m ³
Consumer DNEL, long-term	dermal	systemic	2,5 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	2,5 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic	29 mg/m ³
110-15-6	succinic acid		
Consumer DNEL, acute	inhalation	systemic	10 mg/m ³
Worker DNEL, acute	inhalation	systemic	10 mg/m ³
Worker DNEL, long-term	inhalation	systemic	10 mg/m ³
Consumer DNEL, long-term	inhalation	local	10 mg/m ³
Consumer DNEL, acute	dermal	systemic	67 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	10 mg/m ³
Consumer DNEL, acute	inhalation	local	10 mg/m ³
Worker DNEL, long-term	inhalation	local	10 mg/m ³
Worker DNEL, acute	inhalation	local	10 mg/m ³
Worker DNEL, acute	dermal	systemic	67 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	43 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	67 mg/kg bw/day
Consumer DNEL, long-term	dermal	systemic	43 mg/kg bw/day
Worker DNEL, long-term	dermal	systemic	71 mg/kg bw/day

PNEC values

CAS No	Substance		
	Environmental compartment		Value

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65997-06-0	hydrogenated rosin	
Freshwater		0,0016 mg/l
Marine water		0,00016 mg/l
Freshwater sediment		0,007 mg/kg
Marine sediment		0,0007 mg/kg
Micro-organisms in sewage treatment plants (STP)		1000 mg/l
Soil		0,00045 mg/kg
2687-94-7	N-(n-octyl)-2-pyrrolidone	
Freshwater		0,012 mg/l
Marine water		0,0012 mg/l
Freshwater sediment		0,08 mg/kg
Marine sediment		0,008 mg/kg
Micro-organisms in sewage treatment plants (STP)		4,6 mg/l
Soil		0,06 mg/kg
7440-50-8	copper	
Freshwater		0,0078 mg/l
Marine water		0,0052 mg/l
Freshwater sediment		87 mg/kg
Marine sediment		678 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,23 mg/l
Soil		65 mg/kg
124-04-9	adipic acid	
Freshwater		0,126 mg/l
Marine water		0,0126 mg/l
Freshwater sediment		0,484 mg/kg
Marine sediment		0,0484 mg/kg
Micro-organisms in sewage treatment plants (STP)		59,1 mg/l
Soil		0,0228 mg/kg
97489-11-7	Resin acids and Rosin acids, fumarated, esters with glycerol	
Freshwater		0,1 mg/l
Marine water		0,01 mg/l
Freshwater sediment		1,55 mg/kg
Marine sediment		0,155 mg/kg
Micro-organisms in sewage treatment plants (STP)		1,26 mg/l
Soil		0,249 mg/kg
110-15-6	succinic acid	
Freshwater		0,1 mg/l
Marine water		0,01 mg/l
Marine sediment		0,0079 mg/kg
Soil		0,0177 mg/kg
Freshwater sediment		0,079 mg/kg
Micro-organisms in sewage treatment plants (STP)		3 mg/l

8.2. Exposure controls

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**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Provide adequate ventilation.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses; chemical goggles (if splashing is possible). BS/EN 166

Hand protection

Wear suitable gloves.

Suitable material:

FKM (fluororubber). - Thickness of glove material: 0,4 mm

Breakthrough time \geq 8 h

Butyl rubber. - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

CR (polychloroprenes, Chloroprene rubber). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm

Breakthrough time \geq 8 h

PVC (Polyvinyl chloride). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

The selected protective gloves have to satisfy the specifications of EU Directive EC/2016/425 and the standard EN 374 derived from it.

Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Suitable protective clothing: Lab apron.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

-exceeding exposure limit values

-Insufficient ventilation and aerosol or mist formation

Suitable respiratory protective equipment: particulates filter device (DIN EN 143). Type: P1-3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Paste
Colour:	metallic, grey
Odour:	characteristic

Changes in the physical state

Melting point/freezing point: 217-219 °C

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Boiling point or initial boiling point and boiling range:	not determined
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
Flash point:	not determined
Explosive properties	
none	
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	not determined
Self-ignition temperature	
Gas:	not determined
Decomposition temperature:	not determined
Oxidizing properties	
none	
pH-Value:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined
Flow time:	not determined
Water solubility:	not miscible
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	not determined
Density:	not determined
Relative vapour density:	not determined

9.2. Other information**Information with regard to physical hazard classes**

Sustaining combustion: Not sustaining combustion

Other safety characteristics

Solvent separation test:	not determined
Solvent content:	not determined
Solid content:	not determined
Evaporation rate:	not determined

Further Information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

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Refer to chapter 10.5.

10.4. Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong.

10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicokinetics, metabolism and distribution

No data available.

Acute toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7440-31-5	tin				
	oral	LD50 mg/kg	>2000	Rat	ECHA Dossier
	dermal	LD50 mg/kg	>2000	Rat	ECHA Dossier
	inhalation (4 h) aerosol	LC50 mg/l	(>4,75)	Rat	ECHA Dossier
65997-06-0	hydrogenated rosin				
	oral	LD50 mg/kg	>5000	Rat.	RTECS
	dermal	LD50 mg/kg	(>2000)	Rat.	MSDS extern.
2687-94-7	N-(n-octyl)-2-pyrrolidone				
	oral	LD50 mg/kg	2050	Rat	RTECS
	dermal	LD50 mg/kg	>2000	Rabbit.	RTECS
7440-50-8	copper				
	inhalation (4 h) aerosol	LC50 mg/l	>5,11	Rat	ECHA Dossier
124-04-9	adipic acid				
	oral	LD50 mg/kg	5560	Rat	ECHA Dossier
	dermal	LD50 mg/kg	5010	Rat	ECHA Dossier
	inhalation (4 h) aerosol	LC50 mg/l	> 7,7	Rat	ECHA Dossier
97489-11-7	Resin acids and Rosin acids, fumarated, esters with glycerol				
	oral	LD50 mg/kg	>2000	Rat. (OECD 401)	ECHA Dossier
	dermal	LD50 mg/kg	>2000	Rat. (OECD 402)	ECHA Dossier

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110-15-6	succinic acid					
	oral	LD50 mg/kg	2260	Rat.	RTECS	

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

Contains Resin acids and Rosin acids, fumarated, esters with glycerol. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

N-(n-octyl)-2-pyrrolidone (CAS-No.: 2687-94-7):

In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.

Literature information: ECHA Dossier

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal

No data available.

11.2. Information on other hazards

Endocrine disrupting properties

No data available.

SECTION 12: Ecological information

12.1. Toxicity

The product has not been tested.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
2687-94-7	N-(n-octyl)-2-pyrrolidone					
	Acute fish toxicity	LC50 mg/l	17,8	96 h	Oncorhynchus mykiss	ECHA Dossier
	Acute algae toxicity	ErC50 mg/l	19,5	72 h	Desmodesmus subspicatus	ECHA Dossier
	Acute crustacea toxicity	EC50 mg/l	19,1	48 h	Daphnia magna	ECHA Dossier
124-04-9	adipic acid					
	Acute fish toxicity	LC50 mg/l	1000	96 h	Danio rerio (OECD 203)	ECHA Dossier
	Acute algae toxicity	ErC50	59 mg/l	72 h	Pseudokirchnerella subcapitata (IUCLID)	ECHA Dossier
	Acute crustacea toxicity	EC50	46 mg/l	48 h	Daphnia magna (OECD 202)	ECHA Dossier
	Fish toxicity	NOEC	6,3 mg/l	21 d	Daphnia magna (OECD 211)	ECHA Dossier
97489-11-7	Resin acids and Rosin acids, fumarated, esters with glycerol					
	Acute algae toxicity	ErC50 mg/l	>100	72 h	Desmodesmus subspicatus (OECD 201)	ECHA Dossier

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	Acute crustacea toxicity	EC50 mg/l	>100	48 h	Daphnia magna (OECD 202)	ECHA Dossier	
110-15-6	succinic acid						
	Acute fish toxicity	LC50 mg/l	>100	96 h	Danio rerio (OECD 203)	ECHA Dossier	
	Acute algae toxicity	ErC50 mg/l	>100	72 h	Pseudokirchnerella subcapitata (OECD 201)	ECHA Dossier	
	Acute crustacea toxicity	EC50 mg/l	>100	48 h	Daphnia magna	ECHA Dossier	
	Acute bacteria toxicity	(>300 mg/l)		3 h	Belebschlamm (OECD 209)	ECHA Dossier	

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
65997-06-0	hydrogenated rosin			
	OECD Guideline 301 B	0,95%	28	ECHA Dossier
	Product is not easily biodegradable.			
124-04-9	adipic acid			
	OECD Guideline 301 D	83%	30	ECHA Dossier
	Product is biodegradable.			
110-15-6	succinic acid			
	OECD 301E / EEC 92/69 annex V, C.4-B	96%	28	ECHA Dossier
	Easily biodegradable (concerning to the criteria of the OECD)			

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
124-04-9	adipic acid	0,093
110-15-6	succinic acid	-0,75

BCF

CAS No	Chemical name	BCF	Species	Source
124-04-9	adipic acid	3,162	QSAR	ECHA Dossier

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

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according to UK REACH Regulation

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13.1. Waste treatment methods

Disposal recommendations

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.

Non-contaminated packages may be recycled.

According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

List of Wastes Code - residues/unused products

160303 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

160303 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; inorganic wastes containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150202 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; absorbents, filter materials, wiping cloths and protective clothing; absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances; hazardous waste

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Refer to section 6-8

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14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

2010/75/EU (VOC):	No information available.
2004/42/EC (VOC):	No information available.
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)
 The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
 REACH 1907/2006 Appendix XVII, No (mixture): 3

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	2 - obviously hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

Rev. 1.00; 11.05.2015, Initial release
 Rev. 1.01; 12.06.2015, Indication of changes section: 3, 16.
 Rev. 1.1; 25.11.2016, Indication of changes - chapter: 1, 2, 3, 6, 12, 15, 16.
 Rev. 2.0; 03.06.2020, Indication of changes - chapter: 2-16.
 Rev. 2.1; 18.06.2021, Indication of changes - chapter: 2-16.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 AGW: Arbeitsplatzgrenzwert
 CAS: Chemical Abstracts Service
 CLP: Classification, Labelling and Packaging of substances and mixtures
 DNEL: Derived No Effect Level
 d: day(s)
 EINECS: European INventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 ECHA: European Chemicals Agency
 EWC: European Waste Catalogue
 IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
 h: hour
 LOAEL: Lowest observed adverse effect level
 LOAEC: Lowest observed adverse effect concentration

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LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 NOAEL: No observed adverse effect level
 NOAEC: No observed adverse effect concentration
 NLP: No-Longer Polymers
 N/A: not applicable
 OECD: Organisation for Economic Co-operation and Development
 PNEC: predicted no effect concentration
 PBT: Persistent bioaccumulative toxic
 RID: Reglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 REACH: Registration, Evaluation, Authorisation of Chemicals
 SVHC: substance of very high concern
 TRGS: Technische Regeln für Gefahrstoffe
 UN: United Nations
 VOC: Volatile Organic Compounds

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H411 Toxic to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.
 EUH208 Contains Resin acids and Rosin acids, fumarated, esters with glycerol. May produce an allergic reaction.

Further Information

Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure:
 Health hazards: Calculation method.
 Environmental hazards: Calculation method.
 Physical hazards: On basis of test data and / or calculated and / or estimated.

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 information 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 valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)