

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**396-DRM; 396-DRX-M+**

Revision date: 24.11.2016

Product code: 950410

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

396-DRM; 396-DRX-M+

**Further trade names**

This MSDS covers the following products:

- 396-DRM
- 396-DRX-M+

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

Fluxes for soft soldering

**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:	NL-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 915-1700
Responsible Department:	sds@balverzinn.com	

**1.4. Emergency telephone number:** Chemtrec: +44(0) 870-8200418**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Special labelling of certain mixtures**

EUH208	Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Chemical characterization**

in aqueous solution

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**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
110-94-1	glutaric acid			1 - < 5 %
	203-817-2			
	Eye Irrit. 2; H319			
124-04-9	adipic acid			1 - < 5 %
	204-673-3	607-144-00-9	01-2119457561-38	
	Eye Irrit. 2; H319			

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

**Further Information**

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

**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). Change contaminated clothing.

**After inhalation**

Remove person to fresh air and keep comfortable for breathing. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

**After contact with skin**

Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. 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. Never give anything by mouth to an unconscious person or a person with cramps. In all cases of doubt, or when symptoms persist, seek medical advice.

**4.2. Most important symptoms and effects, both acute and delayed**Caution if victim vomits: Risk of aspiration!  
refer to chapter 2 and 11.**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**Carbon dioxide (CO<sub>2</sub>). 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: Gas/vapours, irritant. Carbon monoxide Carbon dioxide (CO<sub>2</sub>).

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**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**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**

See protective measures under point 7 and 8.

**6.2. Environmental precautions**

Discharge into the environment must be avoided.

**6.3. Methods and material for containment and cleaning up**

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.

Clean contaminated articles and floor according to the environmental legislation.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation.

Do not breathe vapour/aerosol. Avoid contact with skin, eyes and clothes.

Wear suitable protective clothing. (See section 8.)

**Advice on protection against fire and explosion**

The product itself does not burn. Usual measures for fire prevention.

**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.

**Advice on storage compatibility**

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances.

**Further information on storage conditions**

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

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

storage temperature: refer to specifications.

**7.3. Specific end use(s)**

refer to chapter 1.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

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**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
124-04-9	adipic acid			
Worker DNEL, acute		inhalation	systemic	264 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	5 mg/m <sup>3</sup>
Consumer DNEL, long-term		inhalation	systemic	65 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	38 mg/kg bw/day
Consumer DNEL, acute		inhalation	systemic	65 mg/m <sup>3</sup>
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 <sup>3</sup>
Worker DNEL, long-term		inhalation	systemic	264 mg/m <sup>3</sup>

**PNEC values**

CAS No	Substance	Value
124-04-9	adipic acid	
Environmental compartment		
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

**8.2. Exposure controls**



**Appropriate engineering controls**

Provide adequate ventilation.

**Protective and hygiene measures**

The usual precautions for handling chemicals should be considered.

Keep away from food, drink and animal feedingstuffs.

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Protect skin by using skin protective cream. Take off contaminated clothing.

**Eye/face protection**

Recommended eye protection brand: Tightly sealed safety glasses. (DIN EN 166)

**Hand protection**

Wear suitable gloves. (DIN EN 374)

Suitable material: NBR (Nitrile rubber).

Thickness of glove material: 0,11 mm

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break-through time: > 480 min.

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

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.

**Skin protection**

Wear suitable protective clothing.

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

**Respiratory protection**

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

**Environmental exposure controls**

No special precautionary measures are necessary.

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

Physical state: liquid.  
Colour: colourless  
Odour: odourless

**Test method****Changes in the physical state**

Melting point: not applicable  
Initial boiling point and boiling range: ~100 °C  
Flash point: not determined

**Explosive properties**

none

Lower explosion limits: not determined  
Upper explosion limits: not determined  
Decomposition temperature: not determined

**Oxidizing properties**

none.

Vapour pressure: ~23 hPa  
(at 20 °C)

Density: 1,008-1,012 g/cm<sup>3</sup> N/A  
Water solubility: completely miscible

**Solubility in other solvents**

not determined

Viscosity / dynamic: not determined  
(at 20 °C)

Viscosity / kinematic: not determined  
(at 20 °C)

Flow time: not determined

Vapour density: not determined

**9.2. Other information**

Solid content: not determined

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

No information available.

**10.2. Chemical stability**

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

**10.3. Possibility of hazardous reactions**

No information available.

**10.4. Conditions to avoid**

Protect against: UV-radiation/sunlight. heat.

**10.5. Incompatible materials**

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong. Strong acid. strong alkalis.

**10.6. Hazardous decomposition products**Can be released in case of fire: Gas/vapours, irritant. Carbon monoxide Carbon dioxide (CO<sub>2</sub>).**SECTION 11: Toxicological information****11.1. Information on toxicological effects****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
110-94-1	glutaric acid				
	oral	LD50	6000 mg/kg	Mouse.	RTECS
	dermal	LD50	>10000 mg/kg	Rabbit.	RTECS
124-04-9	adipic acid				
	oral	LD50	5560 mg/kg	Rat	ECHA Dossier
	dermal	LD50	5010 mg/kg	Rat	ECHA Dossier
	inhalative (4 h) aerosol	LC50	> 7,7 mg/l	Rat	ECHA Dossier

**Irritation and corrosivity**

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

**Sensitising effects**

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

May cause sensitisation especially in sensitive humans.

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

adipic acid (CAS-No.: 124-04-9):

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

Carcinogenicity:

Exposure time: 24 month

Species: Carworth Farm strain Rat.

Method: no guideline followed

Result: NOAEL = >3750 mg/kg(bw)/day (male.)

Result: NOAEL = >750 mg/kg(bw)/day (female.)

Developmental toxicity/teratogenicity:

Exposure time: 10d

Species: Wistar Rat.

Method: no guideline followed

Result: NOAEL >= 288 ppm (maternal toxicity)

Result: NOAEL >= 288 ppm (developmental toxicity )

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.

adipic acid (CAS-No.: 124-04-9):

Chronic oral toxicity

Exposure time: 24 month

Species: Carworth Farm strain Rat.

Result: NOAEL = 750 mg/kg(bw)/day

literature information: ECHA Dossier

**Aspiration hazard**

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

**Specific effects in experiment on an animal**

No data available.

**SECTION 12: Ecological information**

**12.1. Toxicity**

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	
110-94-1	glutaric acid					
	Acute fish toxicity	LC50 mg/l	330 (24h)	96 h	Lepomis macrochirus	US EPA
124-04-9	adipic acid					
	Acute fish toxicity	LC50	1000 mg/l	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

**12.2. Persistence and degradability**

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CAS No	Chemical name	Method	Value	d	Source
124-04-9	adipic acid	OECD Guideline 301 D	83%	30	ECHA Dossier
	Product is biodegradable.				

**12.3. Bioaccumulative potential****Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
110-94-1	glutaric acid	-0,297
124-04-9	adipic acid	0,093

**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.

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

**12.6. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to EAKV, 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 EAKV:

**Waste disposal number of waste from residues/unused products**

161002 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; aqueous liquid wastes destined for off-site treatment; aqueous liquid wastes other than those mentioned in 16 10 01

**Waste disposal number of used product**

161002 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; aqueous liquid wastes destined for off-site treatment; aqueous liquid wastes other than those mentioned in 16 10 01

**Waste disposal number of contaminated packaging**

150106 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); mixed packaging

**Contaminated packaging**

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

Recommended cleaning agent: Water, if necessary together with cleansing agents.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number:** Not restricted**14.2. UN proper shipping name:** Not restricted

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**14.3. Transport hazard class(es):** Not restricted

**14.4. Packing group:** Not restricted

**Inland waterways transport (ADN)**

**14.1. UN number:** Not restricted

**14.2. UN proper shipping name:** Not restricted

**14.3. Transport hazard class(es):** Not restricted

**14.4. Packing group:** Not restricted

**Marine transport (IMDG)**

**14.1. UN number:** Not restricted

**14.2. UN proper shipping name:** Not restricted

**14.3. Transport hazard class(es):** Not restricted

**14.4. Packing group:** Not restricted

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number:** Not restricted

**14.2. UN proper shipping name:** Not restricted

**14.3. Transport hazard class(es):** Not restricted

**14.4. Packing group:** Not restricted

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**14.6. Special precautions for user**

See section 8.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

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): 1,6 % (calculated)

2004/42/EC (VOC): 16,16 g/l (calculated)

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**Additional information**

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

REACH 1907/2006 Appendix XVII, No: not relevant

**National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

**Additional information**

Observe technical data sheet.

**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; 23.02.2015, Initial release

Rev. 1.1; 24.11.2016, Indication of changes - chapter: 1, 2, 3, 6, 12, 15, 16.

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**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
CAS Chemical Abstracts Service  
DNEL: Derived No Effect Level  
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER  
International Carriage of Dangerous Goods by Road)  
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)  
LOAEL: Lowest observed adverse effect level  
LOAEC: Lowest observed adverse effect concentration  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
NOAEL: No observed adverse effect level  
NOAEC: No observed adverse effect level  
NTP: National Toxicology Program  
N/A: not applicable  
OSHA: Concerning the International Transport of Dangerous Goods by Rail )  
PNEC: predicted no effect concentration  
PBT: Persistent bioaccumulative toxic  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail )  
SARA: Superfund Amendments and Reauthorization Act  
SVHC: substance of very high concern  
TRGS Technische Regeln für Gefahrstoffe  
TSCA: Toxic Substances Control Act  
VOC: Volatile Organic Compounds  
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe  
WGK: Wassergefährdungsklasse

**Relevant H and EUH statements (number and full text)**

H319	Causes serious eye irritation.
EUH208	Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.
EUH210	Safety data sheet available on request.

**Further Information**

Classification according EC regulation 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.)*