

Jentner Plating Technology GmbH
Safety Data Sheet

according to Regulation (EC) No 1907/2006

JENTNER
PLATING TECHNOLOGY

Vivacolor Link

Print date: 28.04.2015

Product code: 151

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

1.1. Product identifier

Vivacolor Link

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

Use of the substance/mixture

Adhesion promoter

1.3. Details of the supplier of the safety data sheet

Company name: Jentner Plating Technology GmbH
Street: Sandweg 20
Place: D-75179 Pforzheim
Telephone: +49 (0)7231 418094 0 Telefax: +49 (0)7231 418094 77
e-mail: info@jentner.de
Contact person: Chemistry Department.
Internet: www.jentner.de
Responsible Department: The respondent department 0049 7231 280980 is reachable at our usual opening times on Mo-Fr between 08:00 am and 05:00 pm

Poison Information Center of the University of Freiburg.

1.4. Emergency telephone number:

0049 (0)761 19240 - 24 h german and english

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: Xn - Harmful, Xi - Irritant
R phrases:
Harmful by inhalation.
Irritating to eyes and respiratory system.
May cause sensitisation by skin contact.
Repeated exposure may cause skin dryness or cracking.

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

Hazard categories:
Flammable liquid: Flam. Liq. 2
Acute toxicity: Acute Tox. 4
Serious eye damage/eye irritation: Eye Irrit. 2
Respiratory/skin sensitization: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause respiratory irritation.

2.2. Label elements

Hazardous components which must be listed on the label

4-methylpentan-2-one, isobutyl methyl ketone
2-methylpropan-2-ol; tert-butyl alcohol
dibenzoyl peroxide; benzoyl peroxide

Signal word: Danger

Pictograms: GHS02-GHS07

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Hazard statements

- | | |
|------|--------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |

Precautionary statements

- | | |
|----------------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P321 | Specific treatment (see 4 on this label). |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P352 | Wash with plenty of water. |
| P364 | And wash it before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P312 | Call a POISON CENTER/doctor if you feel unwell. |
| 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. |
| P235 | Keep cool. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |

Special labelling of certain mixtures

- | | |
|--------|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
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SECTION 3: Composition/information on ingredients

3.2. Mixtures

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Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
203-550-1	4-methylpentan-2-one, isobutyl methyl ketone	<70 %
108-10-1	F - Highly flammable, Xn - Harmful, Xi - Irritant R11-20-36/37-66	
606-004-00-4	Flam. Liq. 2, Acute Tox. 4, Eye Irrit. 2, STOT SE 3; H225 H332 H319 H335 EUH066	
200-889-7	2-methylpropan-2-ol; tert-butyl alcohol	<20 %
75-65-0	F - Highly flammable, Xn - Harmful, Xi - Irritant R11-20-36/37	
603-005-00-1	Flam. Liq. 2, Acute Tox. 4, Eye Irrit. 2, STOT SE 3; H225 H332 H319 H335	
202-327-6	dibenzoyl peroxide; benzoyl peroxide	1 %
94-36-0	E - Explosive, O - Oxidizing, Xi - Irritant R3-7-36-43	
617-008-00-0	Org. Perox. B, Eye Irrit. 2, Skin Sens. 1; H241 H319 H317	

Full text of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Get medical advice/attention.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.
Take off immediately all contaminated clothing, including underwear and shoes .
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 immediately and drink plenty of water. Call a physician in any case!
Do NOT induce vomiting.

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

Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Water spray. alcohol resistant foam. Dry extinguishing powder. Extinguishing powder.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can form flammable/explosive vapour-air mixture.



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5.3. Advice for firefighters

Use suitable breathing apparatus.

Additional information

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection equipment: see section 8
 Keep away from unprotected people. Keep upwind.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

General Precautions for safe handling of chemicals.

Advice on protection against fire and explosion

Vapours/aerosols should be exhausted directly at the point of origin.
 Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharge.
 Vapours may form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a cool dry place. Keep/Store only in original container. Provide adequate ventilation.

Further information on storage conditions

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
75-65-0	2-Methylpropan-2-ol	100	308		TWA (8 h)	WEL
		150	462		STEL (15 min)	WEL
108-10-1	4-Methylpentan-2-one	50	208		TWA (8 h)	WEL
		100	416		STEL (15 min)	WEL
94-36-0	Dibenzoyl peroxide	-	5		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
108-10-1	4-methylpentan-2-one	4-methylpentan-2-one	20 µmol/L	urine	Post shift

8.2. Exposure controls

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Appropriate engineering controls

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Protective and hygiene measures

Do not breathe gas/fumes/vapour/spray.
Keep away from food, drink and animal feedingstuffs.
Wash hands before breaks and after work.
Avoid contact with skin and eyes.

Eye/face protection

Tightly sealed safety glasses.

Hand protection

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Material, solvent-resistant.

Skin protection

For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.
In case of dangerous gases, vapours or dusts self-contained breathing apparatus or suitable masks and filters need to be advised.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	characteristic

pH-Value:	No data available
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Changes in the physical state

Initial boiling point and boiling range:	>83 °C
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
Flash point:	11 °C

Explosive properties

Vapours may form explosive mixtures with air.

Lower explosion limits:	1,0 vol. %
Upper explosion limits:	9,0 vol. %
Ignition temperature:	>400 °C

Oxidizing properties

This material is combustible, but will not ignite readily.

Vapour pressure:	40 hPa
Density:	0,8 g/cm ³
Water solubility:	partially miscible

Test method



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Partition coefficient:	No data available
Viscosity / dynamic:	No data available
Vapour density:	No data available
Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	69,90%

9.2. Other information

Solid content: 1%

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if used as directed.

10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Vapours can form explosive mixtures with air.

Can polymerise exothermically if heated, exposed to air, sunlight or by addition of free radical initiators.

10.6. Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Harmful if inhaled.

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
108-10-1	4-methylpentan-2-one, isobutyl methyl ketone					
	oral	LD50	2080 mg/kg	Rat	RTECS	
	dermal	LD50	>16000 mg/kg	Rabbit	IUCLID	
	inhalative vapour	ATE	11 mg/l			
	inhalative aerosol	ATE	1,5 mg/l			
75-65-0	2-methylpropan-2-ol; tert-butyl alcohol					
	oral	LD50	2733 mg/kg	Rat	IUCLID	
	dermal	LD50	>2000 mg/kg	Rabbit	IUCLID	
	inhalative (4 h) vapour	LC50	> 29,8 mg/l	Rat	IUCLID	
	inhalative aerosol	ATE	1,5 mg/l			

Irritation and corrosivity

Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Dibenzoylperoxid; Benzoylperoxid)

STOT-single exposure

May cause respiratory irritation.



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Severe effects after repeated or prolonged exposure

No data available

Carcinogenic/mutagenic/toxic effects for reproduction

No data available

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	h	Species	Source
108-10-1	4-methylpentan-2-one, isobutyl methyl ketone					
	Acute fish toxicity	LC50 mg/l	505 - 540	96 h	Pimephales promelas	
	Acute algae toxicity	ErC50	400 mg/l	96 h	Selenastrum capricornutum	
	Acute crustacea toxicity	EC50	170 mg/l	48 h	Daphnia magna	IUCLID
75-65-0	2-methylpropan-2-ol; tert-butyl alcohol					
	Acute fish toxicity	LC50	6140 mg/l	96 h	Pimephales promelas	IUCLID
	Acute algae toxicity	ErC50	> 1000 mg/l	72 h	Desmodesmus subspicatus	IUCLID
	Acute crustacea toxicity	EC50	933 mg/l	48 h	Daphnia magna	IUCLID

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-10-1	4-methylpentan-2-one, isobutyl methyl ketone	1,31
75-65-0	2-methylpropan-2-ol; tert-butyl alcohol	0,3

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
 Classified as hazardous waste.

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Contaminated packaging

Contaminated packages must be completely emptied and can be re-used following proper cleaning.
For cleaning up : Water (with cleaning agent)
Packing which cannot be properly cleaned must be disposed of.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOLE, METHYLISOBUTYLKETON)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Classification code: F1
Special Provisions: 274 601 640D
Limited quantity: 1 L
Transport category: 2
Hazard No: 33
Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOLE, METHYLISOBUTYLKETON)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Classification code: F1
Special Provisions: 274 601 640D
Limited quantity: 1 L

Marine transport (IMDG)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOLE, METHYLISOBUTYLKETON)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3



Special Provisions: 274
Limited quantity: 1 L
EmS: F-E, S-E

Air transport (ICAO)

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14.1. UN number:	1993
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S.(BUTANOLE, METHYLISOBUTYLKETON)
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3



Special Provisions:	A3
Limited quantity Passenger:	1 L
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

1999/13/EC (VOC): 69,9 %

National regulatory information

Water contaminating class (D): 2 - water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information

Relevant R-phrases (Number and full text)

03	Extreme risk of explosion by shock, friction, fire or other sources of ignition.
07	May cause fire.
11	Highly flammable.
20	Harmful by inhalation.
36	Irritating to eyes.
36/37	Irritating to eyes and respiratory system.
43	May cause sensitisation by skin contact.
66	Repeated exposure may cause skin dryness or cracking.

Relevant H- and EUH-phrases (Number and full text)

H225	Highly flammable liquid and vapour.
H241	Heating may cause a fire or explosion.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

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

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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 information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

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