



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 1 of 22

1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance/preparation

Trade name Liquid Bronzes
Article No. 1250, 1251, 1252, 1254, 1256 / 12550, 12551, 12552, 12554, 12556
Package size 20 ml / 50 ml
Substance name -
INDEX No. -
EG No. -
CAS No. -
REACH Registration No.-

1.2 Use of the substance/preparation

High-gloss solvent-based and quick-drying liquid bronze for brilliant bronze effects. Suitable for model making, furniture, linen, frames and hobby products which are made of wood, cardboard, stone, ceramic and plastic. For artists and hobby user.

1.3 Manufacturer/Supplier

C. KREUL GmbH & Co. KG
Carl-Kreul-Strasse 2
D-91352 Hallerndorf
Phone no. +49 (0) 9545 925-0
Fax no. +49 (0) 9545 925-511
Mail info@c-kreul.de

Information provided by

Mrs. Treiber, b.treiber@c-kreul.de

1.4 Emergency information

Phone no. +49 (0) 9545 925-0
Fax no. +49 (0) 9545 925-511

(Monday - Thursday 8.00 - 17.00; Friday 8.00 - 15.00)

2. HAZARD IDENTIFICATION

#

2.1 Classification of the substance/preparation

Classification according to Regulation (EC) 1272/2008

Liquid Bronzes 1250, 1251, 1256, 12550, 12551, 12556: Flam. Liq. 3 H226, STOT SE 3 H335, STOT SE 3 H336, Aquatic Acute 1 H400, Aquatic Chronic 2 H411

Liquid Bronzes 1252, 12552: Flam. Liq. 3 H226, Skin Irrit. 2 H315, Eye Irrit. 2 H319, STOT SE 3 H335, STOT SE 3 H336, STOT RE 2 H373, Aquatic Acute 1 H400, Aquatic Chronic 2 H411

Liquid Bronzes Article No. 1254, 12554: Flam. Liq. 3 H226, STOT SE 3 H335, STOT SE 3 H336, Aquatic Chronic 3 H412; EUH066



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 2 of 22

2.2 Labelling according to Regulation (EC) 1272/2008

Liquid Bronzes Article No. 1250, 1251, 1256, 12550, 12551, 12556:

Hazard pictogram and signal word of the product



Warning

Hazard-determining components of labelling

Solvent naphtha (petroleum), light arom., CAS 64742-95-6, n-Butyl acetate CAS 123-86-4, Xylene CAS 1330-20-7, Naphtha (petroleum), hydrodesulfurized heavy CAS 64742-82-1

Hazard statements

H226 Flammable liquid and vapour.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

European hazard statements

EUH -

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P271 Use only outdoors or in a well-ventilated area.
P370+378 In case of fire: Use sand, CO₂, dry powder for extinction.
P501 Dispose of contents/container to hazardous or special waste collection point.

Liquid Bronzes Article No. 1252, 12552:

Hazard pictogram and signal word of the product



Warning

Hazard-determining components of labelling

Solvent naphtha (petroleum), light arom., CAS 64742-95-6, n-Butyl acetate CAS 123-86-4, Xylene CAS 1330-20-7, Naphtha (petroleum), hydrodesulfurized heavy CAS 64742-82-1

Hazard statements

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 3 of 22

H410 Very toxic to aquatic life with long lasting effects.

European hazard statements

EUH -

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P271 Use only outdoors or in a well-ventilated area.
P370+378 In case of fire: Use sand, CO₂, dry powder for extinction.
P501 Dispose of contents/container to hazardous or special waste collection point.

Liquid Bronzes Article No. 1254, 12554:

Hazard pictogram and signal word of the product



Warning

Hazard-determining components of labelling

Solvent naphtha (petroleum), light arom., CAS 64742-95-6, n-Butyl acetate CAS 123-86-4

Hazard statements

H226 Flammable liquid and vapour.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

European hazard statements

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P271 Use only outdoors or in a well-ventilated area.
P370+378 In case of fire: Use sand, CO₂, dry powder for extinction.
P501 Dispose of contents/container to hazardous or special waste collection point.

2.3 Other Hazards

Flammable. Vapours may form explosive mixtures with air. This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical / electrical equipment). Take precautionary measures against static discharges.

Results of PBT and vPvB assessment: Not applicable.



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 4 of 22

3. COMPOSITION/INFORMATION ON INGREDIENTS

#

Chemical characterization

Preparation based on synthetic resins and organic solvent.

Substance related information

The product is a preparation.

Main component

-

INDEX No. -

EG No. -

CAS No. -

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: -

Hazard impurities

-

INDEX No. -

EG No. -

CAS No. -

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: -

3.1 Preparation/mixture related information

20 - 25 % Copper, powder^{1, 2, 3, 5}

INDEX No. -

EG No. 231-159-6

CAS No. 7440-50-8

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: Acute Tox. 4 * H302; Aquatic Acute 1 H400; Aquatic Chronic 2 H411

15 - 25 % Naphtha (petroleum), light arom. Low boiling point hydrogen treated³

INDEX No. 649-356-00-4

EG No. 265-199-0

CAS No. 64742-95-6

REACH Registration No.: 01-2119455851-35-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; Asp. Tox. 1 H304; STOT SE 3 H335; STOT SE 3 H336; Aquatic Chron. 2 H411; EUH066

10 - 20 % Naphtha (petroleum), light arom. Low boiling point hydrogen treated^{1, 2, 4, 5}

INDEX No. 649-356-00-4

EG No. 265-199-0

CAS No. 64742-95-6

REACH Registration No.: 01-2119455851-35-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; Asp. Tox. 1 H304; STOT SE 3 H335; STOT SE 3 H336; Aquatic Chron. 2 H411; EUH066



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 5 of 22

10 - 20 % Naphtha (petroleum), hydrotreated heavy Low boiling point hydrogen treated⁴

INDEX No. 649-327-00-6

EG No. 265-150-3

CAS No. 64742-48-9

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: Asp. Tox. 1 H304

10 - 25 % Aluminium powder (stabilised)⁴

INDEX No. 013-002-00-1

EG No. 231-072-3

CAS No. 7429-90-5

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: Flam. Sol. 1 H228

10 - 20 % n-Butyl acetate^{1, 2, 5}

INDEX No. 607-025-00-1

EG No. 204-658-1

CAS No. 123-86-4

REACH Registration No.: 01-2119485493-29-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; STOT SE 3 H336; EUH066

10 - 15 % n-Butyl acetate^{3, 4}

INDEX No. 607-025-00-1

EG No. 204-658-1

CAS No. 123-86-4

REACH Registration No.: 01-2119485493-29-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; STOT SE 3 H336; EUH066

10 - 12,5 % Xylene, mixture of isomer³

INDEX No. 601-022-00-9

EG No. 215-535-7

CAS No. 1330-20-7

REACH Registration No.: 01-2119488216-32-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; Asp. Tox. 1 H304; Acute Tox. 4* H312; Skin Irrit. 2 H315; Eye Irrit. 2 H319; Acute Tox. 4 * H332; STOT SE 3 H335; STOT RE 2 H373

5 - 10 % Xylene, mixture of isomer^{1, 2, 5}

INDEX No. 601-022-00-9

EG No. 215-535-7

CAS No. 1330-20-7

REACH Registration No.: 01-2119488216-32-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; Asp. Tox. 1



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 6 of 22

H304; Acute Tox. 4* H312; Skin Irrit. 2 H315; Eye Irrit. 2 H319; Acute Tox. 4 * H332;
 STOT SE 3 H335; STOT RE 2 H373

2,5 - 10 % Naphtha (petroleum), hydrodesulfurized heavy^{1, 2, 3, 5}

INDEX No. 649-330-00-2

EG No. 265-185-4

CAS No. 64742-82-1

REACH Registration No.: 01-2119458049-33-XXXX

Classification according to Regulation (EC) 1272/2008: Flam. Liq. 3 H226; Asp. Tox. 1
H304; STOT SE 3 H336; Aquatic Chron. 2 H411; EUH066

2,5 - 10 % Zinc¹

INDEX No. 030-002-00-7, 030-001-01-9

EG No. 231-175-3

CAS No. 7440-66-6

REACH Registration No.: 01-2119467174-37-XXXX

Classification according to Regulation (EC) 1272/2008: Aquatic Acute 1 H400; Aquatic
Chron. 1 H410

1 – 2,5 % Zinc²

INDEX No. 030-002-00-7, 030-001-01-9

EG No. 231-175-3

CAS No. 7440-66-6

REACH Registration No.: 01-2119467174-37-XXXX

Classification according to Regulation (EC) 1272/2008: Aquatic Acute 1 H400; Aquatic
Chron. 1 H410

0,25 – 2,5 % Zinc³

INDEX No. 030-002-00-7, 030-001-01-9

EG No. 231-175-3

CAS No. 7440-66-6

REACH Registration No.: 01-2119467174-37-XXXX

Classification according to Regulation (EC) 1272/2008: Aquatic Acute 1 H400; Aquatic
Chron. 1 H410

< 0,1 % Hydrogenated tallow alkyl amines³

INDEX No. -

EG No. 262-976-6

CAS No. 61788-45-2

REACH Registration No.: -

Classification according to Regulation (EC) 1272/2008: Asp. Tox. 1 H304; Skin Irrit. 2
H315; Eye Dam.1 H318; STOT RE 2 H373; Aquatic Acute 1 H400; Aquatic Chron. 1
H410



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 7 of 22

*minimum classification

¹ Contains in article no. 1250, 12550.

² Contains in article no. 1251, 12551.

³ Contains in article no. 1252, 12552.

⁴ Contains in article no. 1254, 12554.

⁵ Contains in article no. 1256, 12556.

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

4. FIRST AID MEASURES

4.1 General information

Remove contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. Immediately remove person concerned out of danger area. Symptoms see part 11.

After inhalation

Remove to fresh air, keep patient warm and at rest, if breathing is irregular or stopped, administer artificial respiration. If breathing is irregular or stopped, administer artificial respiration. Unconsciousness: lateral poison - contact a doctor immediately.

After skin contact

Remove contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do NOT use solvents or thinners. In case of skin reactions, consult a physician.

After eye contact

Remove contact lens. Irrigate copiously with clean, fresh water for at least 10 - 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion

If swallowed immediately drink: water, to which activated charcoal may be added. Do NOT induce vomiting. During spontaneous vomiting hold the head of the casualty low with the body in a prone position in order to avoid aspiration. Call a physician to the site of the accident in every case.

4.2 The most important acute and delayed appearing symptoms and effects

Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. See part 11.

4.3 References to medical emergency relief or special treatment

With unconsciousness: inform an emergency doctor. Further instructions see section 4.1

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Extinguishing powder, foam, water spray and carbon dioxide.



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 8 of 22

Extinguishing media which must not be used for safety reasons: Full water jet

5.2 Special risk posed by the substance or by the actual preparation, its combustion products or gases discharged

Use water spray jet to protect personnel and to cool endangered containers. Cool endangered containers with water in case of fire. It is possible to pressure formation and to burst of containers. Fire will produce dense black smoke. When product exposed to high temperatures it may produce hazardous decomposition products such as carbon monoxide and carbon dioxide, smoke and other hazards components.

5.3 Special protective equipment

In case of fire: Wear self-contained breathing apparatus. Use water spray jet to protect personnel and to cool endangered containers. Beware of reignition. Do not allow the quenching water into the sewage system. Dispose fire debris and contaminated fire fighting water in accordance with official regulations.

5.4 Additional information

Compare section 3, 7, 8 and 10.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

Wear protective gloves/protective clothing/eye protection/face protection. Remove ignition sources. Provide for sufficient ventilation. Do NOT inhale the vapour. Remove persons to safety.

6.2 Environmental precautions

Take up with a liquid absorbing material and proceed according to the waste disposal regulations. Do not empty into drains or watercourses. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations. Further instructions see section 6.3.

6.3 Methods for cleaning up/collecting

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent; avoid use of solvents. Further instructions see part 10.

6.4 Additional information

Further instructions see section 7, 8 and 10.

7. HANDLING AND STORAGE

7.1 Information for safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Provide adequate ventilation. Never use pressure to empty: container is not a pressure vessel. Do not leave vessels/containers open. Always keep in containers of same material as the original one. Additionally, the product should



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 9 of 22

only be used in areas from which all-naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Preparation may charge electro statically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type. Use only antistatic equipped (spark-free) tools. Comply with the health and safety at work laws (TRGS 500). Avoid skin and eye contact. Avoid inhalation of vapour and spray mist. Smoking, eating and drinking should be prohibited in application area. See protective measures under point 8.

Precautions against fire and explosion

Flammable liquid and vapour. Keep away from sources of ignition - No smoking. Danger of inflammation in cause of weldings-works at empty containers. Vapours may form explosive mixtures with air. Take precautionary measures against static discharges. Usual measures for fire prevention.

7.2 Conditions for safe storage, including incompatibilities

Information about storage conditions

Store between 5 and 30 °C in a dry, well-ventilated place away from sources of heat and direct sunlight. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Keep container tightly closed.

Hints on joint storage

Only substances of the same storage class should be stored together. Keep away from oxidizing agents, from strongly alkaline and strongly acid materials. The substance should not be stored with substances with which hazardous chemical reactions are possible.

Requirement for storage rooms and vessels

Store between 5 and 30 °C in a dry, well-ventilated place away from sources of heat and direct sunlight. No smoking. Keep container tightly closed. Containers, which are opened, must be carefully resealed and kept upright to prevent leakage. Although the storage and use of this product is not subject to specific statutory requirements, observation of the principles of the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations as appropriate will be seen as good industrial practice in meeting the general duties of the Health and Safety at Work Act. Observe label precautions.

Additional information

Storage class (VCI): 3A Flammable liquid substances

7.3 Specific uses

See section 1.1.



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 10 of 22

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#

8.1 Components with critical values that require monitoring at the workplace (exposure limits)

Naphtha (petroleum), light arom. Low boiling point hydrogen treated naphtha; CAS No. 64742-95-6

Specification: AGW
Value: 100 ml/m³ (ppm)
Peak limitation: -
Toxic to reproduction: -
Remark: Hydrocarbon mixture

Naphtha (petroleum), hydrotreated heavy Low boiling point hydrogen treated naphtha; CAS No. 64742-48-9

Specification: AGW
Value: 100 ml/m³ (ppm)
Peak limitation: -
Toxic to reproduction: -
Remark: Hydrocarbon mixture

Naphtha (petroleum), hydrodesulfurized heavy; CAS No. 64742-82-1

Specification: AGW
Value: 100 mg/m³
Peak limitation: -
Toxic to reproduction: -
Remark: Hydrocarbon mixture

n-Butyl acetate; CAS No. 123-86-4

Specification: MAK
Value: 100 ml/m³ (ppm), 480 mg/m³
Peak limitation: 2 (II)
Toxic to reproduction: -
Remark: -

Aluminium powder (stabilised);CAS No. 7429-90-5

Specification: AGW
Value: 3 A mg/m³, 10E mg/m³
Peak limitation: 2 (II)
Toxic to reproduction: -
Remark: With reference to the inhalable fraction.

Xylene, mixture of isomer; CAS No. 1330-20-7

Specification: AGW
Value: 100 ml/m³ (ppm), 440 mg/m³
Peak limitation: 2 (II)
Toxic to reproduction: Y - a risk of reproductive effects needs not to be feared if the occupational exposure limit value (AGW) and the biological limit value (BGW) is kept
Remark: DFG, H



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 11 of 22

Zinc; CAS No. 7440-66-6

Specification: AGW
Value: 2 A mg/m³
Peak limitation: 2 (II)
Toxic to reproduction: -
Remark: With reference to the inhalable fraction.

Cooper; CAS No. 7440-50-8

Specification: AGW
Value: 1,25 A mg/m³; 10 E mg/m³
Peak limitation: 2 (II)
Toxic to reproduction: -
Remark: With reference to the inhalable fraction.

DNEL/DMEL-Values

Copper powder, CAS No. 7440-50-8

Oral	DNEL long-term exposure – systemic effects	0,16 mg/kg bw/d	(general population)
Dermal	DNEL long-term exposure – systemic effects	137 mg/kg bw/d	(general population)
		137 mg/kg bw/d	(worker)
Dermal	DNEL short-term exposure – systemic effects	273 mg/kg bw/d	(general population)
		273 mg/kg bw/d	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	18,2 mg/m ³	(general population)
		18,2 mg/m ³	(worker)

Naphtha (petroleum), hydrotreated heavy Low boiling point hydrogen treated; CAS No. 64742-95-6

Oral	DNEL long-term exposure – systemic effects	11 mg/kg	(general population)
Dermal	DNEL long-term exposure – systemic effects	11 mg/kg bw/d	(general population)
Inhalativ	DNEL long-term exposure – systemic effects	32 mg/m ³	(general population)

Naphtha (petroleum), hydrodesulfurized heavy; CAS no. 64742-82-1

Oral	DNEL long-term exposure – systemic effects	26 mg/kg	(general population)
Dermal	DNEL long-term exposure – systemic effects	26 mg/kg bw/d	(general population)
		44 mg/kg bw/d	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	71 mg/m ³	(general population)
		330 mg/m ³	(worker)

Naphtha (petroleum), hydrotreated heavy Low boiling point hydrogen treated naphtha; CAS No. 64742-48-9

Oral	DNEL long-term exposure – systemic effects	300 mg/kg	(general population)
Dermal	DNEL long-term exposure – systemic effects	300 mg/kg bw/d	(general population)
		300 mg/kg bw/d	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	900 mg/m ³	(general population)

n-Butyl acetate; CAS No. 123-86-4

Inhalativ	DNEL short-term exposure – local effects	859,7 mg/m ³	(general population)
		960 mg/m ³	(worker)



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 12 of 22

Inhalativ	DNEL short-term exposure – systemic effects	859,7 mg/m ³	(general population)
		960 mg/m ³	(worker)
Inhalativ	DNEL long-term exposure – local effects	102,34 mg/m ³	(general population)
		480 mg/m ³	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	102,34 mg/m ³	(general population)
		480 mg/m ³	(worker)

Xylene, mixture of isomer; CAS No. 1330-20-7

Oral	DNEL long-term exposure – systemic effects	1,6 mg/kg bw/d	(general population)
Dermal	DNEL long-term exposure – systemic effects	108 mg/kg bw/d	(general population)
		180 mg/kg bw/d	(worker)
Inhalativ	DNEL short-term exposure – local effects	174 mg/m ³	(general population)
		289 mg/m ³	(worker)
Inhalativ	DNEL short-term exposure – systemic effects	174 mg/m ³	(general population)
		289 mg/m ³	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	14,8 mg/m ³	(general population)
		77 mg/m ³	(worker)

Zinc, CAS No. 7440-66-6

Oral	DNEL long-term exposure – systemic effects	0,83 mg/kg bw/d	(general population)
Dermal	DNEL long-term exposure – systemic effects	83 mg/kg bw/d	(general population)
		83 mg/kg bw/d	(worker)
Inhalativ	DNEL long-term exposure – systemic effects	2,5 mg/m ³	(general population)
		5 mg/m ³	(worker)

PNEC-Values

Copper powder, CAS No. 7440-50-8

STP	0,230 mg/l	(environmental)
freshwater	0,0078 mg/l	(environmental)
marine water	0,0052 mg/l	(environmental)
sediment estuarine	288 mg/kg dry weight	(environmental)
sediment freshwater	87 mg/kg dry weight	(environmental)
sediment marine	676 mg/kg dry weight	(environmental)
soil	65 mg/kg dry weight	(environmental)

Zinc, CAS No. 7440-66-6

STP	0,0052 mg/l	(environmental)
freshwater	0,0206 mg/l	(environmental)
marine water	0,0061 mg/l	(environmental)
sediment freshwater	87 mg/kg dry weight	(environmental)
sediment marine	56,5 mg/kg dry weight	(environmental)
soil	35,6 mg/kg dry weight	(environmental)

Xylene, mixture of isomer; CAS No. 1330-20-7

STP	6,58 mg/l	(environmental)
freshwater	0,327 mg/l	(environmental)
marine water	0,327 mg/l	(environmental)
sediment freshwater	12,46 mg/kg dry weight	(environmental)



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 13 of 22

sediment marine	12,46 mg/kg dry weight	(environmental)
soil	2,31 mg/kg dry weight	(environmental)

n-Butyl acetate; CAS No. 123-86-4

STP	6,58 mg/l	(environmental)
freshwater	0,327 mg/l	(environmental)
marine water	0,327 mg/l	(environmental)
sediment freshwater	12,46 mg/kg dry weight	(environmental)
sediment marine	12,46 mg/kg dry weight	(environmental)
soil	2,31 mg/kg dry weight	(environmental)

8.2 Occupational exposure controls

Technical measures and the application of suitable working methods have precedence before the application of personal protective equipment. Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Suitable judgement methods of the examination of the effectiveness of the grieved preventive measures enclose measuring-technical and non-technical inquiry methods like they in the technical rules for danger materials (TRGS) 402.

Personal protective equipment

Do not eat or drink during work – No smoking. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately.

Respiratory protection

Take breathing protection measures (see also instruct to avoid accidents). Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas): A1 (brown) until 1000 ml/m³ (ppm)
A2 (brown) until 5000 ml/m³ (ppm)
A3 (brown) until 10000 ml/m³ (ppm)

Details are to be inferred “from the rules for the use of respiratory protective devices” (BGR 190 (German regulation)).

Skin protection

Avoid contact with skin. Use protective gloves according to EN 374. Solvent-resistant protective gloves must be worn. The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well ventilated location. Textile or leather gloves are completely unsuitable. Pay attention to skin care.

The following materials are suitable for protective gloves

Inherent protection

Butyl rubber - Butyl (0,3 mm): Permeation time \geq 8 hours

Splash guard

Nitrile rubber/Nitrile latex – NBR (0,4 mm): Permeation time 30 minutes



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 14 of 22

The times listed are suggested by measurements taken at 22 °C and constant contact. Temperatures raised by warmed substances, body heat, etc. and a weakening of the effective layer thickness caused by expansion can lead to a significantly shorter breakthrough time. In case of doubt contact the gloves' manufacturer. A 1.5-times increase / decrease in the layer thickness doubles / halves the breakthrough time. This data only applies to the pure substance. Transferred to mixtures of substances, these figures should only be taken as an aid to orientation.

Eye protection

Avoid contact with eyes. Use safety glasses according to EN 166:2001.

Body protection

Personnel should wear antistatic clothing's made of natural fibre or of high temperature resistant synthetic fibre. All parts of the body should be washed after contact. Light protective clothing.

Limitation and supervision of the environmental exposition

See section 6 and 7.

9. PHYSICAL AND CHEMICAL PROPERTIES

#

9.1 General information

Form: fluid
Colour: refer to label
Odour: like solvent

9.2 Relevant safety data

Flashpoint:	27 - 36°C	DIN EN 22719
Viscosity:	15 - 25 s	DIN 53211, 4 mm
Density: (20 °C)	0,95 – 1,16 g/cm ³	DIN 53217
Explosive limits:		
Lower / Upper:	not determined	
Ignition temperature:	not determined	
Vapour pressure:	not determined (20 °C)	
pH-value:	not applicable	
Solubility in water:	insoluble	

9.3 Additional information

No other physical-chemical data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Keep away from oxidizing agents, strongly alkaline and strongly acid materials. See section 7.

10.2 Chemical stability

If handled properly then product has chemical stability.



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 15 of 22

10.3 Possible dangerous reactions

None, if handled according to order. Further instructions see section 10.1 and 10.2.

10.4 Conditions to avoid

Only use the material in places where open light, fire and other flammable sources can be kept away.

10.5 Incompatible materials

See section 10.1.

10.6 Hazardous decomposition products

When product exposed to high temperatures, it may produce hazardous decomposition products such as carbon monoxide and carbon dioxide, smoke and other hazardous components.

11. TOXICOLOGICAL INFORMATION

#

11.1 Information on toxicological effects

Acute toxicity

Naphtha (petroleum), hydrodesulfurized heavy; CAS No. 64742-82-1

LD₅₀, oral, rat > 15000 mg/kg (OECD 401)

LD₅₀, dermal, rat = 3400 mg/kg (OECD 402)

LC₅₀, inh., rat, 4h = 13100 mg/m³ (OECD 403)

Remark: Substance/product listed in Regulation (EC) 1272/2008.

Naphtha (petroleum), hydrotreated heavy Low boiling point hydrogen treated; CAS No. 64742-48-9

LD₅₀, oral, rat > 8000mg/kg (Supplier's information.)

LD₅₀, dermal, rabbit > 4000 mg/kg (Supplier's information.)

LC₅₀, inh., rat, 4h > 5,4mg/l (Supplier's information.)

Remark: Substance/product listed in Regulation (EC) 1272/2008.

n-Butyl acetate; CAS No. 123-86-4

LD₅₀, oral, rat = 10800 mg/kg (Reference: Acute Toxicity Data. Journal of the American College of Toxicology, Part B. Vol. 1, Pg. 196, 1992.)

LD₅₀, dermal, rabbit = 17600 mg/kg (Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 7, 1974.)

LC₅₀, inh., rat, 4h = 1,85 mg/l (Reference: Inhalation Toxicology. Vol. 9, Pg. 623, 1997.)

Remark: Substance/product listed in Regulation (EC) 1272/2008.

Xylene, mixture of isome; CAS No. 1330-20-7

LD₅₀, oral, rat = 4300 mg/kg (Reference: AMA Archives of Industrial Health. Vol. 14, Pg. 387, 1956.)

LD₅₀, dermal, rabbit > 1700 mg/kg (Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974.)

LC₅₀, inh., rat, 4h = 21,7 mg/l (Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974.)



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 16 of 22

Remark:	Substance/product listed in Regulation (EC) 1272/2008.
Primary irritant effect after inhalation	Exposure to component solvents vapour concentration in excess of the stated occupational exposure limit may result in adverse health effect such as mucous membrane, respiratory system irritation and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
on the skin	<u>Liquid Bronzes Article No. 1252, 12552:</u> Causes skin irritation. <u>Liquid Bronzes Article No. 1254, 12554:</u> Repeated exposure may cause skin dryness or cracking. <u>Liquid Bronzes Article No. 1250, 1251, 1256, 12550, 12551, 12556:</u> There are no data available on the preparation itself.
on the eyes	The liquid splashed in the eyes may cause irritation. <u>Liquid Bronzes Article No. 1252, 12552:</u> Causes serious eye irritation.
after ingestion	May cause lung damage if swallowed. Do not induce vomiting. For symptoms see primary irritant effect after inhalation.
Sensitization Chronic	There are no data available on the preparation itself. <u>Liquid Bronzes Article No. 1252, 12552:</u> May cause damage to organs through prolonged or repeated exposure.

11.2 Additional toxicological information

The product is classified according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

12. ECOLOGICAL INFORMATION

#

12.1 Ecotoxicity

Liquid Bronzes Article No. 1250, 1251, 1252, 1256, 12550, 12551, 12552, 12556: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Liquid Bronzes Article No. 1254, 12554: Harmful to aquatic life with long lasting effects.

Naphtha (petroleum), hydrodesulfurized heavy; CAS no. 64742-82-1

LC_{50, fish, 96h} = 10 - 30 mg/l (OECD 203)

LC_{50, crustaceans, 48h} = 10 - 22 mg/l(OECD 202)

Remark: -

Xylene, mixture of isomer; CAS No. 1330-20-7

LC_{50, fish, 96h} = 15,7 mg/l (Reference: Tatem, H.E., B.A. Cox, and J.W. Anderson 1978. The Toxicity of Oils and Petroleum Hydrocarbons to Estuarine Crustaceans. Estuar.Coast.Mar.Sci. 6(4):365-373; Tatem, H.E. 1975.)

LC_{50, crustaceans, 48h} = 8,5 mg/l (Reference: Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974.)

Remark: -



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 17 of 22

Copper powder; CAS-No. 7440-50-8

LC_{50, fish, 96h} = 0,665 mg/l (Reference: Shariff, M., P.A.H.L. Jayawardena, F.M. Yusoff, and R. Subasinghe 2001. Immunological Parameters of Javanese Carp *Puntius gonionotus* (Bleeker) Exposed to Copper and Challenged with *Aeromonas hydrophila*. *Fish Shellfish Immunol.* 11(4):281-291; Rehwoldt, R., L.W. Menapace, B. Nerrie, and D. Allesandrello 1972. The Effect of Increased Temperature upon the Acute Toxicity of Some Heavy Metal Ions. *Bull. Environ. Contam. Toxicol.* 8(2):91-96.)

LC_{50, crustaceans, 48h} = 0,044 mg/l (Reference: Lazorchak, J.M. 1987. The Significance of Weight Loss of *Daphnia magna* Straus During Acute Toxicity Tests with Copper. Ph.D Thesis, Univ. of Texas, Dallas, TX :191 p.)

EC_{50, crustaceans, 48h} = 0,02 mg/l (Reference: Bossuyt, B.T.A., B.T.A. Muysen, and C.R. Janssen 2005. Relevance of Generic and Site-Specific Species Sensitivity Distributions in the Current Risk Assessment Procedures for Copper and Zinc. *Environ. Toxicol. Chem.* 24(2):470-478.)

EC_{50, algae, 72h} = 0,57 mg/l (Reference: Peterson, S.M., and J.L. Stauber 1996. new Algal Enzyme Bioassay for the Rapid Assessment of Aquatic Toxicity. *Bull. Environ. Toxicol. Chem.* 56(5):750-757.)

EC_{50, algae, 96h} = 7,9 mg/l (Reference: Gatidou, G., and N.S. Thomaidis 2007. Evaluation of Single and Joint Toxic Effects of Two Antifouling Biocides, Their Main Metabolites and Copper Using Phytoplankton Bioassays. *Aquat. Toxicol.* 85(3):184-191.)

Remark: -

n-Butyl acetate; CAS No. 123-86-4

LC_{50, fish, 96h} = 81 mg/l (Reference: Wellens, H. 1982. Comparison of the Sensitivity of *Brachydanio rerio* and *Leuciscus idus* by Testing the Fish Toxicity of Chemicals and Wastewaters. *Z. Wasser-Abwasser-Forsch.* 51(2):49-52 (GER) (ENG ABS); Dawson, G.W., A.L. Jennings, D. Drozdowski, and E. Rider 1977. The Acute Toxicity of 47 Industrial Chemicals to Fresh and Saltwater Fishes. *J. Hazard. Mater.* 1(4):303-318 (OECDG Data File.)

Remark: -

12.2 Persistence/degradability

There are no data available.

12.3 Bioaccumulative potential

There are no data available.

12.4 Mobility

There are no data available.

12.5 Results of PBT and vPvP assessment

There are no data available.



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 18 of 22

12.6 Other adverse effects

There are no data available.

12.7 Further ecological information

Do not discharge into the drains/surface waters/groundwater.

Water hazard class: WGK 2 hazardous for water

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Send to a hazardous waste incinerator facility under observation of official regulations. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Recommendation

Disposal must be made according to official regulations.

13.2 European waste code number in accordance with AAV

EWC No.: 08 01 11 waste paint and varnish containing organic solvents or other dangerous substances

EWC No.: 20 01 27 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS paint, inks, adhesives and resins containing dangerous substances

13.3 Packaging

Contaminated packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing, may be taken for reuse. Packaging that cannot be cleaned should be disposed in the same manner as the medium.

EWC No. 15 01 10 packaging containing residues of or contaminated by dangerous substances

Non-contaminated packages

EWC No.: 15 01 02 plastic packaging

EWC No.: 15 01 07 glass packaging

14. TRANSPORT INFORMATION

**14.1 Land transport ADR/RID and GVS/GGVE
Liquid Bronzes Article No. 1254, 12554:**



Class: 3 Flammable liquids



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 19 of 22

Kemler-Code: 30
UN No.: 1263
Packaging group: III
Label: 3
Special marking: -
Proper shipping name: 1263 – Paint (Contains Naphtha.)
Classification-Code: F1
Limit: 5 L
Tunnel restriction code: 3 (D/E)

Liquid Bronzes Article No. 1250, 1251, 1252, 1256, 12550, 12551, 12552, 12556:



Class: 3 Flammable liquids
Kemler-Code: 30
UN No.: 1263
Packaging group: III
Label: 3
Special marking: Symbol (fish and tree)
Proper shipping name: 1263 – Paint (Contains Copper powder.)
Classification-Code: F1
Limit: 5 L
Tunnel restriction code: 3 (D/E)

14.2 Maritime transport IMDG/GGVSea

Liquid Bronzes Article No. 1254, 12554:



Class: 3
UN No.: 1263
Label: 3
Packaging group: III
EmS-No.: F-E, S-E
Marine pollutant: -
Proper shipping name: Paint (Contains Naphtha.)

Liquid Bronzes Article No. 1250, 1251, 1252, 1256, 12550, 12551, 12552, 12556:



Class: 3
UN No.: 1263
Label: 3



**Material Safety Data Sheet according to Regulation (EC) No. 1907/2006
(revised by Regulation (EC) No. 453/2010)**

Liquid Bronzes

Page 20 of 22

Packaging group: III
EmS-No.: F-E, S-E
Marine pollutant: yes
Proper shipping name: Paint (Contains Copper powder.)

**14.3 Air transport ICAO-TI and IATA-DGR
Liquid Bronzes Article No. 1254, 12554:**



ICAO/IATA Class: 3
UN no.: 1263
Label: 3
Packaging group: III
Proper shipping name: Paint (Contains Naphtha.)

Liquid Bronzes Article No. 1250, 1251, 1252, 1256, 12550, 12551, 12552, 12556:



ICAO/IATA Class: 3
UN no.: 1263
Label: 3
Packaging group: III
Proper shipping name: Paint (Contains Copper powder.)

14.3 Remarks

Product contains environmentally hazardous substances: **Liquid Bronzes Article No. 1250, 1251, 1252, 1256, 12550, 12551, 12552, 12556:** Copper powder.

15. REGULATORY INFORMATION

#

15.1 European Regulation

Chemical Safety Assessment: For this substance a chemical safety assessment is not required.

15.2 National Regulations

Statutory order on hazardous incidents (StörfallV): Annex I, Nr. 6, 9b
Regulation on inflammable liquids: VbF-Class: All
Emission control act ("TA-Luft"): 3.1.7 Class III
Water hazard class: WGK 2 hazardous for water (according VwVwS)

15.3 Additional information

The product is classified according to the EEC directives and the Ordinance on Hazardous Materials (GefStoffV).



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 21 of 22

If bottle \leq 125 ml then the following H- and P-phrases are not necessary: H226, H315, H319, H410, P210, P370+P378.

Please check local regulations.

Volatile organic compounds (Swiss): 45 %; 9,9 g/20ml; 25 g/50ml; 0,495 kg/l

The advertised use (section 1) is not subject of the Directive 2004/42/EC.

16. OTHER INFORMATION

#

16.1 Changes compared with the last version

The last version was all changed and revised completely. Alterations to the previous edition are marked in the right-hand margin.

16.2 Literature reference and data source

Regulation (EC) 1999/45, last changed by Regulation (EC) 1907/2006

Regulation (EC) 67/548, last changed by Regulation (EC) 2009/2

REACH Regulation (EC) 1907/2006, last changed by Regulation (EC) 453/2010

Regulation (EC) 1272/2008, last changed by Regulation (EC) 790/2009

Internet

<http://www.baua.de>

<http://www.arbeitssicherheit.de>

<http://www.gischem.de>

16.3 Full text of H- and R-phrases appearing in section 2 and 3:

According to Regulation (EC) 1272/2008

Flam. Liq. 3 H226	Flammable liquid and vapour.
Flam. Sol. 1 H228	Flammable solid.
Acute Tox.4 H302	Harmful if swallowed.
Asp. Tox.1 H304	May be fatal if swallowed and enters airways.
Acute Tox. 4 * H312	Harmful in contact with skin.
Skin Irrit. 2 H315	Causes skin irritation.
EyeDam. 1 H318	Verursacht schwere Augenschäden.
Eye Irrit. 2 H319	Causes serious eye irritation.
Acute Tox. 4* H332	Harmful if inhaled.
STOT SE 3 H335	May cause respiratory irritation.
STOT SE 3 H336	May cause drowsiness or dizziness.
STOT RE 2 H373	May cause damage to organs through prolonged or repeated exposure.
Aquatic Acute 1 H400	Very toxic to aquatic life.
Aquatic Chron. 1 H410	Very toxic to aquatic life with long lasting effects.
Aquatic Chronic 2 H411	Toxic to aquatic life with long lasting effects.

* minimum classification

EUH – statements

EUH066 Repeated exposure may cause skin dryness or cracking.



Material Safety Data Sheet according to Regulation (EC) No. 1907/2006 (revised by Regulation (EC) No. 453/2010)

Liquid Bronzes

Page 22 of 22

Methods according to article 9 of the order (EC) No. 1272/2008 for the assessment of the information for the purpose of the classification were used:

Classification according to Regulation (EC) 1272/2008, Annex VII (conversion table)

16.4 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)
BImSchV:	Order for the realisation of the Federal Immission Protection Law
CAS:	Chemical Abstracts Service
DIN:	Norm of the German institute of standardization
EC:	Effective concentration
EC50:	Effective concentration, 50 percent
EG:	European Community
EINECS:	European Inventory of Existing Commercial Chemical Substances
EN:	European Standard
GefStoffV:	Ordinance on Hazardous Substances, Germany
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
IATA:	International Air Transport Association
IMDG:	International Maritime Code for Dangerous Goods
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
Log K_{ow}:	n-octanol-water partition coefficient
OECD:	Organisation for Economic Co-operation and Development
PBT:	Persistent, bioaccumulateable, toxically
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
TRGS:	Technical rules for danger materials
UN:	United Nations (Vereinte Nationen)
VOC:	Volatile Organic Compounds
vPvB:	very much persistent and very bioaccumulateable
VwVwS:	Administrative regulation of hazardous to waters materials
WGK:	Water hazardous class

16.5 Department issuing safety data sheet

Laboratory, Mrs. Dipl.-Ing. Treiber, b.treiber@c-kreul.de.

16.6 Additional information

The data is based on our present knowledge. The data correspond to the national and EEC legislation. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

It is not permitted to use the product for any other application mentioned in chapter 1 except with a written permission. The user is responsible for the compliance with all valid legal regulation.

This safety data sheet is only valid for Liquid Bronzes. It's not valid for other products placed in the according sales displays or sets.