

Safety Data Sheet

according to Regulation (EC) No 1907/2006

die:master spacer varnish

Print date: 08.05.2014

Product code: 1956-0X00

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

die:master spacer varnish

Further trade names

1956-0100 die:master gray
1956-0200 die:master red
1956-0300 die:master blue
1956-0400 die:master silver
1956-0500 die:master gold
1956-0800 die:master Set red
1956-0900 die:master Set blue
1956-1000 die:master Set gold/silver

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

Lacquer

1.3. Details of the supplier of the safety data sheet

Company name:	Renfert GmbH	
Street:	Untere Giesswiesen 2	
Place:	D-78247 Hilzingen	
Telephone:	+49 7731 8208-0	Telefax: +49 7731 8208-70
e-mail:	info@renfert.com	
Contact person:	Frau Andris	Telephone: +49 7731 8208-927
Internet:	www.renfert.com	

1.4. Emergency telephone number:

Vergiftungs-Zentrale Freiburg
+49 761 19 240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Indications of danger: F - Highly flammable, Xi - Irritant
R phrases:
Highly flammable.
Irritating to eyes and respiratory system.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

GHS classification

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

2.2. Label elements**Hazardous components which must be listed on the label**

butanone; ethyl methyl ketone
pentan-3-one; diethyl ketone
n-butyl acetate

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Signal word:

Danger

Pictograms:

GHS02-GHS07


Hazard statements

- | | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

Precautionary statements

- | | |
|-----------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P280 | Wear protective gloves and eye/face protection. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

Special labelling of certain mixtures

- | | |
|--------|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
|--------|---|

Additional advice on labelling

The R and S phrases can be omitted if the pack contains no more than 0,125 litres.

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

Lacquer

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
201-159-0	butanone; ethyl methyl ketone	20 - 55%
78-93-3	F - Highly flammable, Xi - Irritant R11-36-66-67	
606-002-00-3	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336	
202-490-3	pentan-3-one; diethyl ketone	5 - 35%
96-22-0	F - Highly flammable, Xi - Irritant R11-37-66-67	
606-006-00-5	Flam. Liq. 2, STOT SE 3, STOT SE 3; H225 H335 H336	
204-658-1	n-butyl acetate	5 - 20%
123-86-4	R10-66-67	
607-025-00-1	Flam. Liq. 3, STOT SE 3; H226 H336	

Full text of R and H phrases: see Section 16.

SECTION 4: First aid measures
4.1. Description of first aid measures

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General information

Immediately remove any contaminated clothing, shoes or stockings.

After inhalation

Provide fresh air.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. When in doubt or if symptoms are observed, get medical advice.

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

The following symptoms may occur: Vapours may cause drowsiness and dizziness. Processing vapours can irritate the respiratory tracts, skin and eyes. Repeated exposure may cause skin dryness or cracking.

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

Extinguishing powder Carbon dioxide (CO₂) alcohol resistant foam Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Vapours can form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation.

Use personal protection equipment.

Remove all sources of ignition.

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).

Collect in closed and suitable containers for disposal.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use only in well-ventilated areas.

Avoid contact with skin and eyes.

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Advice on protection against fire and explosion

Vapours can form explosive mixtures with air.
Keep away from sources of ignition. - No smoking.

Further information on handling

If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
123-86-4	Butyl acetate	150	724		TWA (8 h)	WEL
		200	966		STEL (15 min)	WEL
96-22-0	Pentan-3-one	200	716		TWA (8 h)	WEL
		250	895		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

8.2. Exposure controls

Appropriate engineering controls

refer to chapter 7. No further action is necessary.

Protective and hygiene measures

Do not breathe vapour.
Avoid contact with skin, eyes and clothes.
Wash hands before breaks and after work.
Keep away from food, drink and animal feeding stuffs.

Eye/face protection

Wear eye/face protection.

Hand protection

Tested protective gloves must be worn Suitable material: NBR (Nitrile rubber)Butyl caoutchouc (butyl rubber)
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.

Respiratory protection

Respiratory protection necessary at: insufficient ventilation

Environmental exposure controls

Do not allow to enter into surface water or drains.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: various, depending on coloration
Odour: characteristic

Test method

pH-Value: not applicable

Changes in the physical state

Initial boiling point and boiling range: 79 °C
Flash point: < 0 °C DIN 51755 (cc)

Explosive properties

not explosive.
Vapours can form explosive mixtures with air.

Lower explosion limits: 1,2 vol. %

Upper explosion limits: 11,5 vol. %

Ignition temperature: 370 °C

Density (at 20 °C): 0,8 - 1,0 g/cm³

Water solubility: Immiscible

Viscosity / dynamic: The product has not been tested.

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours can form explosive mixtures with air.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Vapours can form explosive mixtures with air.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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Acute toxicity

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
96-22-0	pentan-3-one; diethyl ketone				
	oral	LD50	2140 mg/kg	Rat	GESTIS
	dermal	LD50	16300 mg/kg	Rabbit	GESTIS
123-86-4	n-butyl acetate				
	oral	LD50	14000 mg/kg	Ratte	

Irritation and corrosivity

Irritant effect on the skin: Not an irritant.

Irritating to eyes.

Sensitising effects

not sensitising.

Practical experience

Observations relevant to classification

Repeated exposure may cause skin dryness or cracking.

Vapours may cause drowsiness and dizziness.

Other observations

Has de-greasing effect on the skin.

Further information

The product has not been tested. The statement is derived from the properties of the single components.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
96-22-0	pentan-3-one; diethyl ketone					
	Acute fish toxicity	LC50	1540 mg/l	96 h	Pimephales promelas	GESTIS

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
96-22-0	pentan-3-one; diethyl ketone	0,82

12.4. Mobility in soil

There are no data available on the mixture itself.

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.

Further information

The product has not been tested. The statement is derived from the properties of the single components. Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

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13.1. Waste treatment methods**Advice on disposal**

Send to a hazardous waste incinerator facility under observation of official regulations.

Waste disposal number of waste from residues/unused products

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Classified as hazardous waste.

Contaminated packaging

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

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number: UN 1263
14.2. UN proper shipping name: FARBE
14.3. Transport hazard class(es): 3
14.4. Packing group: II

Marine transport (IMDG)

14.1. UN number: UN 1263
14.2. UN proper shipping name: PAINT
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Marine pollutant: no

Air transport (ICAO)

14.1. UN number: UN 1263
14.2. UN proper shipping name: PAINT
14.3. Transport hazard class(es): 3
14.4. Packing group: II

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): 1956-0100: 72,8% / 1956-0200: 69,4% / 1956-0300: 69,6%
1956-0400: 82,3% / 1956-0500: 74,1%

National regulatory information

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

Additional information

M 017 Lösemittel (BGI 621)
M 004 Reizende Stoffe / Ätzende Stoffe (BGI 595)

SECTION 16: Other information**Full text of R phrases referred to under Sections 2 and 3**

10 Flammable.
11 Highly flammable.

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36	Irritating to eyes.
36/37	Irritating to eyes and respiratory system.
37	Irritating to respiratory system.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.

Full text of H statements referred to under Sections 2 and 3

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

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 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. Restricted to professional users.

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

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

1.1. Product identifier

die:master duo

Further trade names

1956-0800 die:master Set red

1956-0900 die:master Set blue

1956-1000 die:master Set gold/silver

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

Use of the substance/mixture

Lacquer

1.3. Details of the supplier of the safety data sheet

Company name:	Renfert GmbH	
Street:	Untere Giesswiesen 2	
Place:	D-78247 Hilzingen	
Telephone:	+49 7731 8208-0	Telefax: +49 7731 8208-70
e-mail:	info@renfert.com	
Contact person:	Frau Andris	Telephone: +49 7731 8208-927
Internet:	www.renfert.com	

1.4. Emergency telephone number: Vergiftungs-Zentrale Freiburg
+49 761 19 240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: F - Highly flammable, Xi - Irritant
R phrases:
Highly flammable.
Irritating to eyes.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

GHS classification

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

2.2. Label elements

Hazardous components which must be listed on the label

butanone; ethyl methyl ketone
n-butyl acetate

Signal word: Danger
Pictograms: GHS02-GHS07

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Hazard statements

- H225 Highly flammable liquid and vapour.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.

Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P280 Wear protective gloves and eye/face protection.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures

- EUH066 Repeated exposure may cause skin dryness or cracking.

Additional advice on labelling

The R and S phrases can be omitted if the pack contains no more than 0,125 litres.

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

Lacquer

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
201-159-0	butanone; ethyl methyl ketone	< 80 %
78-93-3	F - Highly flammable, Xi - Irritant R11-36-66-67	
606-002-00-3	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336	
204-658-1	n-butyl acetate	10 - 25%
123-86-4	R10-66-67	
607-025-00-1	Flam. Liq. 3, STOT SE 3; H226 H336	

Full text of R and H phrases: see Section 16.

SECTION 4: First aid measures
4.1. Description of first aid measures
General information

Immediately remove any contaminated clothing, shoes or stockings.

After inhalation

Provide fresh air.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

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After contact with eyes

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. When in doubt or if symptoms are observed, get medical advice.

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

The following symptoms may occur: Vapours may cause drowsiness and dizziness. Processing vapours can irritate the respiratory tracts, skin and eyes. Repeated exposure may cause skin dryness or cracking.

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

Extinguishing powder, Carbon dioxide (CO₂), alcohol resistant foam, Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Vapours can form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
In case of fire: Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation.
Use personal protection equipment.
Remove all sources of ignition.

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).
Collect in closed and suitable containers for disposal.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use only in well-ventilated areas.
Avoid contact with skin and eyes.

Advice on protection against fire and explosion

Vapours can form explosive mixtures with air.
Keep away from sources of ignition. - No smoking.

Further information on handling

If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
123-86-4	Butyl acetate	150	724		TWA (8 h)	WEL
		200	966		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

8.2. Exposure controls

Appropriate engineering controls

refer to chapter 7. No further action is necessary.

Protective and hygiene measures

Do not breathe vapour.
 Avoid contact with skin, eyes and clothes.
 Wash hands before breaks and after work.
 Keep away from food, drink and animal feeding stuffs.

Eye/face protection

Wear eye/face protection.

Hand protection

Tested protective gloves must be worn Suitable material: NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)

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.

Respiratory protection

Respiratory protection necessary at: insufficient ventilation

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: not applicable

Changes in the physical state

Initial boiling point and boiling range: 79 °C

Test method

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Flash point: - 5 °C DIN 51755 (cc)

Explosive properties

not explosive.
Vapours can form explosive mixtures with air.

Lower explosion limits: 1,2 vol. %

Upper explosion limits: 11,5 vol. %

Ignition temperature: 370 °C

Density (at 20 °C): 0,78 - 0,88 g/cm³

Water solubility: Immiscible

Viscosity / dynamic: The product has not been tested.

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

Vapours can form explosive mixtures with air.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Vapours can form explosive mixtures with air.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
123-86-4	n-butyl acetate	oral	LD50	14000 mg/kg	Ratte	

Irritation and corrosivity

Irritant effect on the skin: Not an irritant.
Causes serious eye irritation.

Sensitising effects

not sensitising.

STOT-single exposure

May cause drowsiness or dizziness.

Severe effects after repeated or prolonged exposure

Repeated exposure may cause skin dryness or cracking.

Practical experience**Observations relevant to classification**

Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

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Other observations

Has de-greasing effect on the skin.

Further information

The product has not been tested. The statement is derived from the properties of the single components.

SECTION 12: Ecological information**12.1. Toxicity**

There are no data available on the mixture itself.

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

12.4. Mobility in soil

There are no data available on the mixture itself.

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.

Further information

Do not allow to enter into surface water or drains.

The product has not been tested. The statement is derived from the properties of the single components.

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

Send to a hazardous waste incinerator facility under observation of official regulations.

Waste disposal number of waste from residues/unused products

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Classified as hazardous waste.

Contaminated packaging

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

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number:** UN 1263**14.2. UN proper shipping name:** FARBE**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II**Marine transport (IMDG)****14.1. UN number:** UN 1263**14.2. UN proper shipping name:** PAINT**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Marine pollutant: no

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Air transport (ICAO)

14.1. UN number:	UN 1263
14.2. UN proper shipping name:	PAINT
14.3. Transport hazard class(es):	3
14.4. Packing group:	II

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): 89,2 %

National regulatory information

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

Additional information

M 017 Lösemittel (BGI 621)

M 004 Reizende Stoffe / Ätzende Stoffe (BGI 595)

SECTION 16: Other information

Full text of R phrases referred to under Sections 2 and 3

10	Flammable.
11	Highly flammable.
36	Irritating to eyes.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.

Full text of H statements referred to under Sections 2 and 3

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

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 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. Restricted to professional users.

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

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

Product identifier

die:master thinner

Further trade names

1956-0800 die:master Set red

1956-0900 die:master Set blue

1956-1000 die:master Set gold/silver

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

Use of the substance/mixture

die:master thinner

Details of the supplier of the safety data sheet

Company name:	Renfert GmbH	
Street:	Untere Giesswiesen 2	
Place:	D-78247 Hilzingen	
Telephone:	+49 7731 8208-0	Telefax: +49 7731 8208-70
e-mail:	info@renfert.com	
Contact person:	Frau Andris	Telephone: +49 7731 8208-927
Internet:	www.renfert.com	

Emergency telephone: Vergiftungs-Zentrale Freiburg
+49 761 19 240

SECTION 2: Hazards identification

Classification of the substance or mixture

Indications of danger : Highly flammable, Irritant
R-phrases:
Highly flammable.
Irritating to eyes and respiratory system.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

GHS classification

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Label elements

Hazardous components which must be listed on the label

butanone; ethyl methyl ketone
pentan-3-one; diethyl ketone
n-butyl acetate

Signal word: Danger
Pictograms: GHS02-GHS07

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Hazard statements

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves and eye/face protection.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures

EUH066	Repeated exposure may cause skin dryness or cracking.
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Additional advice on labelling

The R and S phrases can be omitted if the pack contains no more than 0,125 litres.

SECTION 3: Composition/information on ingredients
Mixtures
Chemical characterization

Solvent

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
201-159-0	butanone; ethyl methyl ketone	50 - 70%
78-93-3	F, Xi R11-36-66-67	
606-002-00-3	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336	
202-490-3	pentan-3-one; diethyl ketone	20 - 40%
96-22-0	F, Xi R11-37-66-67	
606-006-00-5	Flam. Liq. 2, STOT SE 3, STOT SE 3; H225 H335 H336	
204-658-1	n-butyl acetate	5 - 15%
123-86-4	R10-66-67	
607-025-00-1	Flam. Liq. 3, STOT SE 3; H226 H336	

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

SECTION 4: First aid measures
Description of first aid measures
General information

Change contaminated clothing.

After inhalation

Provide fresh air.

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After contact with skin

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

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion

Rinse mouth immediately and drink large quantities of water. Do not induce vomiting. Seek medical attention if problems persist.

Most important symptoms and effects, both acute and delayed

Following symptoms can occur: Vapours may cause drowsiness and dizziness. Process vapours can irritate airways, skin and eyes. Repeated exposure may cause skin dryness or cracking.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures**Extinguishing media****Suitable extinguishing media**

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

Extinguishing media which must not be used for safety reasons

High power water jet.

Special hazards arising from the substance or mixture

Vapours may form explosive mixtures with air.

Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

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

SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation.

Wear personal protection equipment.

Remove all sources of ignition.

Environmental precautions

Do not empty into drains or the aquatic environment.

Methods and material for containment and cleaning up

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

Collect in closed containers for disposal.

Reference to other sections

See protective measures under point 7 and 8.

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

Use only in well-ventilated areas.

Avoid contact with skin and eyes.

Advice on protection against fire and explosion

Vapours may form explosive mixtures with air.

Keep away from sources of ignition - No smoking.

Further information on handling

In case of open handling, use devices with built-in suction where possible.

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Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

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

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure limits (EH40)

CAS No	Chemical name	ml/m ³	mg/m ³	F/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
123-86-4	Butyl acetate	150	724		TWA (8 h)	WEL
		200	966		STEL (15 min)	WEL
96-22-0	Pentan-3-one	200	716		TWA (8 h)	WEL
		250	895		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Chemical name	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

Exposure controls

Occupational exposure controls

refer to chapter 7. No further action is necessary.

Protective and hygiene measures

Do not breathe vapour.

Avoid contact with skin, eye and clothing.

Wash hands before breaks and at the end of work.

Keep away from food, drink and animal feedingstuffs.

Respiratory protection

Respiratory protection required in case of: insufficient ventilation.

Hand protection

Tested protective gloves are to be worn: Suitable material: NBR (Nitrile rubber). Butyl rubber.

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

Eye protection

Tightly sealed safety glasses.

Environmental exposure controls

Do not empty into drains or the aquatic environment.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless
Odour:	characteristic

Test method

pH-Value:	not applicable
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Changes in the physical state

Boiling point: 79 °C

Flash point: - 4 °C

Explosive properties

not explosive.

Vapours may form explosive mixtures with air.

Lower explosion limits: 1,2 vol. %

Upper explosion limits: 11,5 vol. %

Ignition temperature: 370 °C

Density (at 20 °C): 0,7 - 0,9 g/cm³

Water solubility: not miscible

Viscosity / dynamic: product has not been tested.

Solvent content: 100%

SECTION 10: Stability and reactivity**Reactivity**

Vapours may form explosive mixtures with air.

Chemical stability

See chapter 7. No further action is necessary.

Possibility of hazardous reactions

Vapours may form explosive mixtures with air.

Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Incompatible materials

No information available.

Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapors.

SECTION 11: Toxicological information**Information on toxicological effects****Acute toxicity**

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
96-22-0	pentan-3-one; diethyl ketone				
	oral	LD50	2140 mg/kg	Rat	GESTIS
	dermal	LD50 mg/kg	16300	Rabbit	GESTIS
123-86-4	n-butyl acetate				
	oral	LD50 mg/kg	14000	Ratte	

Irritation and corrosivity

Irritant effect on the skin: Not an irritant.

Irritant effect on the eye: irritant.

Sensitising effects

no danger of sensitization.

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Empirical data on effects on humans

Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.
Has de-greasing effect on the skin.

Further information

product has not been tested. The statement is derived from the properties of the components.

SECTION 12: Ecological information**Toxicity**

CAS No	Chemical name	Method	Dose	h	Species	Source
	Aquatic toxicity					
96-22-0	pentan-3-one; diethyl ketone					
	Acute fish toxicity	LC50	1540 mg/l	96	Pimephales promelas	GESTIS

Persistence and degradability

There are no data available on the mixture itself.

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

CAS No	Chemical name	Log Pow
96-22-0	pentan-3-one; diethyl ketone	0,82

Mobility in soil

There are no data available on the mixture itself.

Results of PBT and vPvB assessment

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

Further information

product has not been tested. The statement is derived from the properties of the components. Do not allow uncontrolled leakage of product into the environment.

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

Carry out a burning of hazardous waste according to official regulations.

Waste disposal number of waste from residues/unused products

070704 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; other organic solvents, washing liquids and mother liquors
Classified as hazardous waste.

Contaminated packaging

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

SECTION 14: Transport information**Land transport (ADR/RID)**

UN number: 1263
UN proper shipping name: FARBZUBEHÖRSTOFFE
Transport hazard class(es): 3
Packing group: II

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Marine transport

UN number:	1263
UN proper shipping name:	PAINT RELATED MATERIAL
Transport hazard class(es):	3
Packing group:	II
Marine pollutant:	no

Air transport

UN/ID number:	1263
UN proper shipping name:	PAINT RELATED MATERIAL
Transport hazard class(es):	3
Packing group:	II

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

1999/13/EC (VOC): 100 %

National regulatory information

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

Additional information

M 017 Lösemittel (BGI 621)

M 004 Reizende Stoffe / Ätzende Stoffe (BGI 595)

SECTION 16: Other information**Full text of R-phrases referred to under sections 2 and 3**

10	Flammable.
11	Highly flammable.
36	Irritating to eyes.
36/37	Irritating to eyes and respiratory system.
37	Irritating to respiratory system.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.

Full text of H-Statements referred to under sections 2 and 3

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

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 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. Reserved for industrial and professional use.

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