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**1. STOFF-/ZUBEREITUNGS- UND FIRMENBEZEICHNUNG**

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|  |  |  |
|--|--|--|
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**2. ZUSAMMENSETZUNG/ANGABEN ZU BESTANDTEILEN**

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**ZUBEREITUNG AUF BASIS:****Ethanol (Ethylalkohol)**

Gehalt: 99,00 %

CAS-Nr.: 64-17-5

Symbol(e): F

INDEX-Nr.: 603-002-00-5

R-Sätze: -R11

EG-Nr.: 200-578-6

**Butanon; Methylethylketon**

Gehalt: 1,00 %

CAS-Nr.: 78-93-3

Symbol(e): F, Xi

INDEX-Nr.: 606-002-00-3

R-Sätze: -R11 -R36 -R66 -R67

EG-Nr.: 201-159-0

Für den ganzen Wortlaut der R-Sätze in diesem Abschnitt, siehe unter Abschnitt 16.

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**3. MÖGLICHE GEFAHREN**

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Leichtentzündlich.

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**4. ERSTE-HILFE-MASSNAHMEN**

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|                            |                                                                                                                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Allgemeine Hinweise</b> | Beschmutzte, getränkte Kleidung sofort ausziehen.                                                                                                                               |
| <b>Einatmen</b>            | An die frische Luft gehen.                                                                                                                                                      |
| <b>Hautkontakt</b>         | Sofort mit viel Wasser abwaschen.                                                                                                                                               |
| <b>Augenkontakt</b>        | Bei Berührung mit den Augen sofort gründlich mit viel Wasser spülen. Bei anhaltender Augenreizung einen Facharzt aufsuchen.                                                     |
| <b>Verschlucken</b>        | Mund mit Wasser ausspülen und reichlich Wasser nachtrinken. Kein Erbrechen herbeiführen. Bei Verschlucken sofort ärztlichen Rat einholen und Verpackung oder Etikett vorzeigen. |

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**5. MASSNAHMEN ZUR BRANDBEKÄMPFUNG**

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|                              |                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------|
| <b>Geeignete Löschmittel</b> | Sprühwasser, Trockenpulver, alkoholbeständiger Schaum, Kohlendioxid (CO <sub>2</sub> ) |
| <b>Weitere Angaben</b>       | Container/Tanks mit Wassersprühstrahl kühlen.                                          |

## 6. MASSNAHMEN BEI UNBEABSICHTIGTER FREISETZUNG

|                                                |                                                                                                                                                                                                                                   |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personenbezogene<br/>Vorsichtsmaßnahmen</b> | Für angemessene Lüftung sorgen. Von Zündquellen fernhalten - Nicht rauchen.                                                                                                                                                       |
| <b>Umweltschutzmaßnahmen</b>                   | Nicht in Oberflächenwasser oder Kanalisation gelangen lassen. Eindringen in den Untergrund vermeiden. Verunreinigung des Grundwassers durch das Material vermeiden.                                                               |
| <b>Verfahren zur Reinigung</b>                 | Auslaufendes Material mit nicht brennbarem, absorbierendem Material (z.B. Sand, Erde, Kieselgur, Vermiculit) eindämmen und aufnehmen, und in Behälter zur Entsorgung gemäss lokalen / nationalen gesetzlichen Bestimmungen geben. |

## 7. HANDHABUNG UND LAGERUNG

### HANDHABUNG

|                                                     |                                                                                                                                              |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hinweise zum Brand- und<br/>Explosionsschutz</b> | Von Zündquellen fernhalten - Nicht rauchen. Maßnahmen gegen elektrostatische Aufladungen treffen. Nur explosionsgeschützte Geräte verwenden. |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|

### LAGERUNG

|                                                   |                                                                              |
|---------------------------------------------------|------------------------------------------------------------------------------|
| <b>Anforderung an Lagerräume<br/>und Behälter</b> | Behälter dicht verschlossen an einem kühlen, gut belüfteten Ort aufbewahren. |
| <b>Lagerklasse (VCI-System / D ):</b>             | 3A; Entzündliche flüssige Stoffe                                             |

## 8. EXPOSITIONSBEGRENZUNG UND PERSÖNLICHE SCHUTZAUSRÜSTUNG

### BESTANDTEILE MIT ARBEITSPLATZBEZOGENEN, ZU ÜBERWACHENDEN GRENZWERTEN

| Inhaltstoffe                 | CAS-Nr. | Typ                                      | Grenzwerte                                                                                               | Stand                                                          | Basis                                                        |
|------------------------------|---------|------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------|
| Ethanol (Ethylalkohol)       | 64-17-5 | MAK<br>MAK                               | 1.900 mg/m <sup>3</sup><br>1.000 ppm                                                                     | 09 2001<br>09 2001                                             | TRGS 900<br>TRGS 900                                         |
| Butanon;<br>Methylethylketon | 78-93-3 | MAK<br>MAK<br>TWA<br>TWA<br>STEL<br>STEL | 600 mg/m <sup>3</sup><br>200 ppm<br>600 mg/m <sup>3</sup><br>200 ppm<br>900 mg/m <sup>3</sup><br>300 ppm | 09 2001<br>09 2001<br>06 2000<br>06 2000<br>06 2000<br>06 2000 | TRGS 900<br>TRGS 900<br>EU ELV<br>EU ELV<br>EU ELV<br>EU ELV |

### TECHNISCHE SCHUTZMAßNAHMEN

Für ausreichenden Luftaustausch und/oder Absaugung in den Arbeitsräumen sorgen.

### PERSÖNLICHE SCHUTZAUSRÜSTUNG

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| <b>Atemschutz</b>       | Bei unzureichender Belüftung Atemschutzgerät anlegen.                     |
| <b>Handschutz</b>       | <b>geeignete Handschuhe:</b><br>Material: lösemittelbeständige Handschuhe |
| <b>Augenschutz</b>      | dicht schließende Schutzbrille                                            |
| <b>Hygienemaßnahmen</b> | Beschmutzte, getränkte Kleidung sofort ausziehen.                         |
| <b>Schutzmaßnahmen</b>  | Dämpfe und Sprühnebel nicht einatmen.                                     |

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**9. PHYSIKALISCHE UND CHEMISCHE EIGENSCHAFTEN**

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|                                           |                                 |
|-------------------------------------------|---------------------------------|
| Form                                      | flüssig                         |
| Farbe                                     | farblos                         |
| Geruch                                    | alkoholisch                     |
| Schmelzpunkt/Schmelzbereich               | -114 °C                         |
| Siedepunkt/Siedebereich                   | 78,3 °C                         |
| Flammpunkt                                | 12 °C; DIN 51755 Part 1         |
| Zündtemperatur                            | 425 °C                          |
| Untere Explosionsgrenze                   | 3,5 %(V)                        |
| Obere Explosionsgrenze                    | 15 %(V)                         |
| Dampfdruck                                | 59 hPa; 20 °C                   |
| Dichte                                    | 0,789 g/cm <sup>3</sup> ; 20 °C |
| Wasserlöslichkeit                         | vollkommen mischbar             |
| Verteilungskoeffizient (n-Oktanol/Wasser) | log Pow: -0,31                  |
| Viskosität, dynamisch                     | 1,19 mPa.s; 20 °C               |

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**10. STABILITÄT UND REAKTIVITÄT**

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|                                 |                                              |
|---------------------------------|----------------------------------------------|
| Gefährliche Zersetzungsprodukte | Keine bekannt.                               |
| Thermische Zersetzung           | Bei Normdruck ohne Zersetzung destillierbar. |
| Gefährliche Reaktionen          | Keine bekannt.                               |

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**11. ANGABEN ZUR TOXIKOLOGIE**

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|                            |                                                                                                                           |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Akute orale Toxizität      | Ethanol (Ethylalkohol):<br>LD50 Ratte: > 2.000 mg/kg; OECD TG 401; (Literaturwert)                                        |
| Akute inhalative Toxizität | Ethanol (Ethylalkohol):<br>LC50 Maus: > 20 mg/l; ; 4 h(Literaturwert)                                                     |
| Akute dermale Toxizität    | Ethanol (Ethylalkohol):<br>LD50 Kaninchen: > 2.000 mg/kg; OECD TG 402; (Literaturwert)                                    |
| Hautreizung                | Ethanol (Ethylalkohol):<br>Kaninchen: nicht reizend; OECD TG 404; (Literaturwert)                                         |
| Augenreizung               | Ethanol (Ethylalkohol):<br>Kaninchen: leicht reizend; OECD TG 405; (Literaturwert)                                        |
| Sensibilisierung           | Ethanol (Ethylalkohol):<br>Maximisation Test (GPMT) Meerschweinchen: nicht sensibilisierend; OECD TG 406; (Literaturwert) |
| Gentoxizität in vitro      | Ethanol (Ethylalkohol):<br>Ames-Test: nicht mutagen; OECD TG, 471; (Literaturwert)                                        |

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**12. ANGABEN ZUR ÖKOLOGIE**

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|                          |                                                                                                                |
|--------------------------|----------------------------------------------------------------------------------------------------------------|
| Biologische Abbaubarkeit | Ethanol (Ethylalkohol):<br>Leicht biologisch abbaubar.; > 70 %; 5 d; OECD-Richtlinie 301 D;<br>(Literaturwert) |
|--------------------------|----------------------------------------------------------------------------------------------------------------|

**ÖKOTOXISCHE WIRKUNGEN**

|                          |                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Fischtoxizität</b>    | Ethanol (Ethylalkohol):<br>LC50 Leuciscus idus: > 100 mg/l; 48 h; OECD TG 203, Paris, 1981;<br>(Literaturwert)  |
| <b>Daphnientoxizität</b> | Ethanol (Ethylalkohol):<br>EC50 Daphnia magna: > 100 mg/l; 24 h; OECD TG 202, Paris, 1981;<br>(Literaturwert)   |
| <b>Algentoxizität</b>    | Ethanol (Ethylalkohol):<br>EC50 Chlorella pyrenoidosa: > 100 mg/l; OECD TG 201, Paris, 1981;<br>(Literaturwert) |

**13. HINWEISE ZUR ENTSORGUNG**

|                                               |                                                                                                                                                                                          |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Produkt</b>                                | Kann unter Beachtung der örtlichen behördlichen Vorschriften verbrannt werden.                                                                                                           |
| <b>Verunreinigte Verpackungen</b>             | Kontaminierte Verpackungen sind optimal zu entleeren. Sie können dann nach entsprechender Reinigung einer Wiederverwendung zugeführt werden.                                             |
| <b>Abfallschlüssel Europäische Union: EWC</b> | Für dieses Produkt kann keine Abfallschlüsselnummer gemäß europäischem Abfallkatalog (EAK) festgelegt werden, da erst der Verwendungszweck durch den Verbraucher eine Zuordnung erlaubt. |

**14. ANGABEN ZUM TRANSPORT**

|                  |                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------|
| <b>ADR</b>       | UN-Nr.: 1170; LQ 4                                                                                   |
| <b>RID</b>       | Bezeichnung des Gutes: Ethanol                                                                       |
| <b>ADNR</b>      | UN-Nr.: 1170; Klasse: 3; Ziffer: 3b); Bezeichnung des Gutes: Ethanol                                 |
| <b>IMDG</b>      | UN-Nr.: 1170; Klasse: 3; Ziffer: 3b); Bezeichnung des Gutes: Ethanol                                 |
| <b>ICAO/IATA</b> | UN-Nr.: 1170; Klasse: 3; EmS: 3-06; MFAG: 305; Verpackungsgruppe: II; Bezeichnung des Gutes: Ethanol |

**15. VORSCHRIFTEN****KENNZEICHNUNG**

|                                           |                                                                                                        |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Kennzeichnung gemäß EG-Richtlinien</b> | EG/99/45                                                                                               |
| <b>Symbol(e):</b>                         | F: Leichtentzündlich                                                                                   |
| <b>R-Sätze</b>                            | R11: Leichtentzündlich.                                                                                |
| <b>S-Sätze</b>                            | S 2: Darf nicht in die Hände von Kindern gelangen<br>S16: Von Zündquellen fernhalten. - Nicht rauchen. |

**NATIONALE VORSCHRIFTEN**

|                                |                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Gefahrklasse nach VbF</b>   | B: Fp < 21°C; bei 15°C wasserlöslich                                                                 |
| <b>Störfallverordnung</b>      | Das Produkt entspricht mindestens einer der im Anhang I (StörfallIV 2000) genannten Kategorien 1-11. |
| <b>Wassergefährdungsklasse</b> | WGK 1: schwach wassergefährdend; Einstufung nach Anhang 4 VwVwS                                      |
| <b>TA Luft</b>                 | organische Materialien<br>%-Anteil TA-Luft Klasse III: 100 %                                         |

## 16. SONSTIGE ANGABEN

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### Wortlaut der R-Sätze unter Abschnitt 2

|     |                                                                 |
|-----|-----------------------------------------------------------------|
| R11 | Leichtentzündlich.                                              |
| R36 | Reizt die Augen.                                                |
| R66 | Wiederholter Kontakt kann zu spröder oder rissiger Haut führen. |
| R67 | Dämpfe können Schläfrigkeit und Benommenheit verursachen.       |

Die Angaben in diesem Sicherheitsdatenblatt entsprechen nach bestem Wissen unseren Erkenntnissen bei Drucklegung. Die Informationen sollen Ihnen Anhaltspunkte für den sicheren Umgang mit dem in diesem Sicherheitsdatenblatt genannten Produkt bei Lagerung, Verarbeitung, Transport und Entsorgung geben. Die Angaben sind nicht übertragbar auf andere Produkte. Soweit das in diesem Sicherheitsdatenblatt genannte Produkt mit anderen Materialien vermengt, vermischt oder verarbeitet wird, oder einer Bearbeitung unterzogen wird, können die Angaben in diesem Sicherheitsdatenblatt, soweit sich hieraus nicht ausdrücklich etwas anderes ergibt, nicht auf das so gefertigte neue Material übertragen werden.

|| Sektion wurde überarbeitet.

## Safety Data Sheet

according to 1907/2006 / EC, Article 31

Print Date: 23/07/2015

Version no. 101

Reviewed on 15/04/2015

### SECTION 1: Identification of the substance or mixture and of the company

#### - 1.1 Product

- Trade name: **Risto flame, bottle 1000 ml + Canister 5.000 ml**

- Item number:

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

No further relevant information available.

- Use of the substance / mixture

igniter

liquid fuel

- 1.3 Details of the supplier of the safety data sheet

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

- 1.4 Emergency telephone number:

see above

### SECTION 2: Hazards

- 2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) no. 1272/2008

Flam. Liq. 2 H225 Liquid and vapor flammable.

- Classification according to Directive 67/548 / EEC or Directive 1999/45 / EC

F; Highly flammable R11: Highly

flammable.

- Classification system

The classification corresponds to current EC lists, but is supplemented by information from technical literature and company information.

- 2.2 Label elements

- Labeling according to Regulation (EC) no. 1272/2008

The product is classified and marked according to CLP.

- hazard pictograms



GHS02

- signal word danger

- Statements

H225 liquid and vapor flammable.

- safety instructions

P210

Keep away from heat / sparks / open flames / hot surfaces. Do not smoke.

P102

Keep out of the reach of children.

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**Trade name: liquid fuel 1000 ml + 5000 ml**

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P403 + P233 in a well-ventilated place.

- **Additional information:** deleted
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition / information on ingredients**

- **3.2 liquid fuel**
- **Description:** Solvent mixture

**- Hazardous ingredients:**

|                                                             |                                                          |       |
|-------------------------------------------------------------|----------------------------------------------------------|-------|
| CAS: 64-17-5 EINECS: 200-578-6<br>Reg.nr.: 01-2119457610-43 | Safety fuel paste<br>F R11 Flam. Liq. 2,<br>H225         | > 75% |
| CAS: 78-93-3 EINECS: 201-159-0<br>Reg.nr.: 01-2119457290-43 | 2-butanone Xi R36; F<br>R11 R66-67 Flam. Liq. 2,<br>H225 | <1%   |

- **add. Hints:** The wording of the listed risk phrases refer to heading 16.

**SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
- **General information:** Remove contaminated clothing immediately.
- **After inhalation:**  
Provide fresh air. Then consult a doctor. call breathing irregularities donation or oxygen inhalation and doctor immediately - if breathing has stopped or not. In case of unconsciousness place and transport in stable sideways position.
- **after skin contact:**  
Remove contaminated clothing immediately. Wash affected areas with soap and water.
- **Eyes:**  
Rinse immediately opened eye for several minutes under running water and seek medical advice.
- **After swallowing**  
Rinse mouth with water.  
Do not induce vomiting, seek medical attention immediately.
- **Informations for the doctor:**  
(Decontamination, vital functions), no known specific antidote symptomatic.

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**Trade name: Liquid fuel, 1000 ml + 5000 ml**

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- **4.3 Indication of immediate medical attention and special treatment** No further relevant information available.

### SECTION 5: Fire-fighting measures

#### - 5.1 Extinguishing media

##### - Suitable extinguishing media:

CO<sub>2</sub>, powder or water spray. Fight larger fires with water or alcohol resistant foam.

#### - Extinguishing Media: Water jet

#### - 5.2 from the substance or mixture of hazards

Formation of explosive vapor / air mixture. Incomplete combustion of carbon monoxide CO can occur. Vapors are heavier than air and spread out on the ground. Ignition over greater distances.

#### - 5.3 Advice for firefighters

##### - Protective equipment: Wear full protective clothing including self-contained breathing apparatus.

##### - More information

cool the container by stream of water.

swirl explosive gas-air mixtures with water spray or ex-protected ventilation equipment. Shut off the endangered area downwind. The fire cool containers with water spray affected. Danger of bursting.

### SECTION 6: Accidental release measures

#### - 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment Keep unprotected persons.

Extinguish naked flames. Remove sources of ignition. Do not smoke. avoid sparks. Avoid contact with skin, eyes and clothes. Do not inhale fumes.

Ventilate contaminated area thoroughly. Take precautions against electrostatic charges.

#### - 6.2 Environmental precautions:

Prevent entry into sewers, pits, cellars and water. inform larger amounts are released competent authorities.

#### - 6.3 Methods and materials for containment and cleaning up:

binding material (sand, diatomaceous earth, acid or universal binder, sawdust). Ensure adequate ventilation.

Contaminated material as waste according to item 13.

#### - 6.4 Reference to other sections

Risk of explosion.

For information on safe handling, see section 7. Information regarding waste disposal, see section. 13

Information regarding personal protective equipment see Chapter eighth

### SECTION 7: Handling and Storage

#### - 7.1 Precautions for safe handling

Keep container tightly closed.

at the workplace for good ventilation / exhaustion.

#### - Information about fire and explosion protection:

Sources of ignition - no smoking.

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**Trade name: Liquid fuel, 1000 ml + 5000 ml**

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**- 7.2 Conditions for safe storage, including any incompatibilities**

**- Storage:**

Keep away from direct sunlight and other heat and ignition. Store in tightly closed containers in cool, dry.

**- Requirements for storage rooms and containers:**

Observe official regulations on storage and handling of water-polluting substances. Store in a cool place.

**- Storage instructions:**

Legislation / technical regulations for joint storage of flammable Products note. -

**Further information about storage conditions:**

Adequate earthing of storage and transport facilities to look for. Do not store in aluminum or aluminum-containing alloys.

**- Storage class: 3 Flammable Liquids**

**- Classification according to use (air): Flammable**

**- 7.3 Specific end No further relevant information available.**

### SECTION 8: Exposure controls Expos it ion / Personal cozy protection

**- Additional information on system design:**

Ventilation or extraction. Measures against electrostatic charge.

**- 8.1 Control parameters**

**- Constituents with occupational exposure to be monitored parameters: 64-17-5 ethanol**

**(50-100%)**

AGW 960 mg / m<sup>3</sup> 500 mg / m<sup>3</sup>

2 (II); DFG, Y

**78-93-3 2-butanone (<2.5%)**

AGW 600 mg / m<sup>3</sup> 200 mg / m<sup>3</sup>

1 (I); DFG, EU, H, Y

**- DNELs 64-17-5**

**ethanol**

Orally DNEL (population) 87 mg / kg bw / day (long term - systemic effects) Dermal DNEL

(population) 206 mg / kg bw / day (long term - systemic effects)

DNEL (worker) 343 mg / kg bw / day (Long-term - systemic effects)

Inhalation DNEL (population) 950 mg / m<sup>3</sup> (Acute - local effects)

114 mg / m<sup>3</sup> (Long-term - systemic effects)

DNEL (worker) 1900 mg / m<sup>3</sup> (Acute - local effects) 950 mg / m<sup>3</sup>

(Long-term - systemic effects)

**- PNECs 64-17-5**

**ethanol**

PNEC 0.63 mg / kg dw (floor) 580

mg / l (380)

PNEC aqua 0.96 mg / l (375)

0.79 mg / l (376)

PNEC sediment 3.6 mg / kg dw (375)

2.9 mg / kg dw (376)

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**Trade name: liquid fuel 1000 ml + 5000 ml**

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- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure Exposure controls**

- **Personal protective equipment:**

- **General safety and hygiene measures:**

Keep away from food, beverages and animal feed. Wash hands before breaks and at the end of work. **spotted Take off clothing immediately.**  
Avoid contact with eyes and skin. Do not inhale gases / vapors.

- **Respiratory protection:**

Not required for room ventilation.

- **Recommended filter device for short term use:**

A combination filter-P2

Take care of limitations and rules for the use of respirators note (BGR 190).

- **Hand protection:**

Chemical-resistant protective gloves (EN 374)

Check protective gloves prior to each use for their proper condition.

- **Glove material**

butyl rubber

**Recommended thickness:  $\geq 0.5$  mm**

The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

Note the specifications of protective gloves producers on penetration and breakthrough time, and of special workplace conditions (mechanical strain, duration of contact). At the first sign of wear and tear, the gloves should be replaced. Our recommendation is a unique short-term use to protect against liquid splashes. For other applications, contact a glove manufacturer.

- **Eye protection:** Tightly sealed goggles.

- **Body protection:**

Standard protective working clothes. Chemical resistant safety shoes or boots. If skin contact can wear impervious clothing occur for this substance.

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Form:**

**liquid**

**Colour:**

colorless

- **Odor:**

alcoholic

- **pH-value (100 g / l) at 20 ° C:**

7,0

- **change in condition**

**Melting Point / Range:** Not determined

**Boiling point /**

~ 78 ° C

- **Flash point:**

12 ° C (DIN 51755)

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**Trade name: Burning liquid 1,000 ml + 5.000ml**

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|                                           |                                                                                                 |
|-------------------------------------------|-------------------------------------------------------------------------------------------------|
| - Ignition temperature:                   | 425 ° C (DIN 51794) for<br>pure ethanol                                                         |
| - Self:                                   | The product is not self-igniting.                                                               |
| - Explosion hazard:                       | The product is not explosive, however, formation of explosive air / vapor mixtures is possible. |
| - Explosion limits: Lower:                | ~ 3.5% by volume                                                                                |
| upper:                                    | ~ 15% by volume                                                                                 |
| - Vapor pressure at 20 ° C:               | 57 mbar                                                                                         |
| - Density at 20 ° C:                      | about 0.808 g / cm <sup>3</sup>                                                                 |
| - Solubility in / miscibility with water: | partially soluble                                                                               |
|                                           |                                                                                                 |

### SECTION 10: Stability and reactivity

- 10.1 Reactivity
- 10.2 Chemical stability
- Thermal decomposition / conditions to avoid:  
Avoid: heat, flames, sparks
- 10.3 Possibility of hazardous reactions  
Reactions with oxygen.  
Reactions with strong oxidizing agents.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials:  
strong oxidizing agents  
strong acids
- 10.6 Hazardous decomposition products: In case of fire Formation of carbon monoxide and carbon dioxide CO<sub>2</sub>.

### SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity:

- LD / LC50 values: 64-17-5 ethanol

|            |           |                      |
|------------|-----------|----------------------|
| Orally     | LD50      | 10470 mg / kg (rat)  |
| dermal     | LD50      | > 2000 mg / kg (rab) |
| Inhalation | LC 50/4 h | > 20 mg / l (mouse)  |

- Primary irritant effect:
- on the skin: Slightly irritating, but no irritant according to EU directives

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Trade name: **Burning liquid 1.000 ml + 5.000 ml**

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- **sensitization:** No sensitizing effects known.

- **Specific target organ toxicity repeated exposure:** 64-17-5 ethanol

Oral NOAEL 1760 mg / kg (rat) (OECD 408, 90 d, target organ: liver)

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

The ingredients of this mixture does not meet the criteria for classification as CMR category according to CLP.

## SECTION 12: Ecological information

- **12.1 toxicity**

- **Aquatic toxicity:** 64-17-5

**ethanol**

EC 50 / 48h > 10000 mg / l (Daphnia magna) EC 50/72 h

275 mg / l (Chlorella vulgaris) LC 50 / 48h 8140 mg / l

(L.idus)

- **12.2 Persistence and degradability**

The product is easily biodegradable. Biodegradation:

BOD 5 (20 ° C): Ethanol = 71% of the ThOD

2-butanone = 83% of the ThOD (unadapted)

- **12.3 Bioaccumulative**

No bioaccumulation expected; the organic components are soluble in water and biodegradable.

- **12.4 mobility in soil**

- **Additional Information:**

- **General information:**

Keep out of reach ground water, water course or sewage system. Water Hazard Class 1 (self assessment): slightly hazardous to water according VwVwS.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal

- **Recommendation:**

Must not be disposed together with household garbage. Do not empty into drains. If possible, send to recycling, otherwise burn in an approved facility or deposit.

- **Contaminated packaging:** Disposal according to official regulations.

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**Trade name: liquid fuel 1000 ml + 5000 ml**

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- **Recommended cleaning agent:** Water, optionally with the addition of detergents.**SECTION 14: Transport information**

- 14.1 UN number

- ADR, IMDG, IATA

UN 1170

- 14.2 UN proper shipping name

- ADR

**1170 ETHANOL SOLUTION (ETHYL SOLUTION)**

- IMDG

ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

- IATA

ETHANOL SOLUTION

- 14.3 Transport hazard class

- ADR

- class

**3 (F1) Flammable liquids**

- Label

**3**

- IMDG, IATA

- Class

**3 Flammable materials**

- Label4

- 14.4 Packing group

- ADR, IMDG, IATA

II

- 14.5 Environmental hazards:

Not applicable.

- Marine pollutant:

No

- 14.6 Special precautions for user

Warning: Flammable substances

- Number Hazard identification

(Kemler):

- EMS Number:

- 14.7 Transport in bulk according to Annex II of MARPOL 73/78  
and the IBC Code

Not applicable.

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**SECTION 15:**

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

- **National regulations:**

- **Information about limitation:**

- **Classification according to use (air): Flammable**

- **Technical instructions: Class**

|                   |        |
|-------------------|--------|
| <b>Share in %</b> |        |
| NK                | 50-100 |

- **VOC content:** 100% of volatile organic compounds (according to 31 BlmschV / EC Directive 2010/75).

- **Water hazard class:** Class 1 (self assessment): slightly hazardous to water.

- **Other regulations, restrictions and prohibitions**

Only for the intended Z awakening use

- **15.2 Chemical Safety Assessment:** A chemical safety assessment was not carried out.

**SECTION 16: Other information**

This information is based on the present state of our knowledge, but do not represent any assurance of product properties and establishes no contract legal rights.

- **relevant phrases**

Full text specified in Section 3 with abbreviation hazards (H- and R-sentences). These phrases refer to the constituents. The marking of the product is stated in Section 2. H225 liquid and vapor flammable.

R11 Highly flammable.

- **Issuing MSDS:** See Informing departement

- **Contact Person:**

Messrs. W. Rinklake GmbH & Co. KG

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport de marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: International Civil Aviation Organization NOAEL: No Observed Adverse Effect Level LEV: Local Exhaust Ventilation RPE: Respiratory Protective Equipment RCR: Characterization Risk ratio (RCR = PEC /)

ADR: Accord européen sur le transport de marchandises Dangereuses par Route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods IATA:

International Air Transport Association

GHS: Globally Harmonized System of Classification and Labeling of Chemicals CLP: Classification, Labeling and Packaging

(Regulation (EC) No. 1272/2008) TRGS: Technical Rules for Hazardous Substances (Technical Rules for Dangerous Substances,

BAuA, Germany)

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**liquid fuel 1000 ml + 5000 ml**

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DNEL: Derived No-Effect Level (REACH) PNEC: Predicted  
No-Effect Concentration (REACH) LC50: Lethal concentration, 50  
percent LD50: Lethal dose, 50 percent

- \* Data compared to the previous version altered

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