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1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** *ETHANOL 100 % denatured with 1 % MEK*
- **Article number:** 60642/6
- **Application of the substance / the preparation** Solvents
- **Manufacturer/Supplier:**
 Brüggemann Alcohol
 Postfach 1451
 D-74004 Heilbronn
- **Further information obtainable from:**
 ALT (production management)
 phone: +49(0)7131/1575-167
 fax: +49(0)7131/1575-175
 e-mail: peter.tippelt@brueggemann.com
- **Information in case of emergency:** +49(0)7131 1575-110

2 Composition/information on ingredients

- **Description:** preparation
 - **Dangerous components:**
 - **CAS-No. Description R-phrases**
- | | | |
|-------------------|--|------------|
| CAS: 64-17-5 | ethanol | 90-100% |
| EINECS: 200-578-6 |  F; R 11 | |
| CAS: 78-93-3 | butanone | 0.5 - 1.5% |
| EINECS: 201-159-0 |  Xi,  F; R 11-36-66-67 | |
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

- **Hazard description:**



F Highly flammable

- **Information concerning particular hazards for human and environment:**
 Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.
 R 11 Highly flammable.
- **Classification system:**
 The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 First-aid measures

- **General information:**
 Take affected persons out of danger area and lay down.
 Take affected persons out into the fresh air.
 Keep warm, position comfortably and cover well.
 Remove contaminated clothing
- **After inhalation:**
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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- **After skin contact:**
Clean with water and soap. If possible, also wash with polyethylene glycol 400.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Rinse out mouth and then drink plenty of water.

5 Fire-fighting measures

- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**
Can form explosive gas-air mixtures.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- **Additional information:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Store in cool, dry place in tightly closed receptacles.
Use only in well ventilated areas.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- **Information about fire - and explosion protection:**
Take precautionary measures against static discharges.
Keep ignition sources away - Do not smoke.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Provide solvent resistant, sealed floor.
Keep container tightly sealed.
Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.

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Store in a cool location.

- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Store in a cool place.
- **Storage class:** 3A

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Ingredients with limit values that require monitoring at the workplace:**

64-17-5 ethanol

OES Long-term value: 1920 mg/m³, 1000 ppm

78-93-3 butanone

OES Short-term value: 899 mg/m³, 300 ppm

Long-term value: 600 mg/m³, 200 ppm
 IOELV, Sk, Bmgv

- **Personal protective equipment:**
- **General protective and hygienic measures:** Do not eat, drink, smoke or sniff while working.

- **Respiratory protection:**

In exceptional cases, e.g. accidental release and exceeding of the occupational limit, respiratory protection is required.

Use a respiratory protection apparatus with filter A (colour: brown)

Observe further additional national regulations concerning respiratory protection.

- **Protection of hands:**



Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

- **Material of gloves**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.5 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

Value for the permeation: Level ≥ 8 h

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Solvent resistant protective clothing

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- **Limitation and supervision of exposure into the environment**
- water (76/464/EEC): not listed
- air (1999/3=7EC): not listed

9 Physical and chemical properties

· General Information

- **Form:** Liquid
- **Colour:** Colourless
- **Odour:** Like alcohol

· Change in condition

- **Melting point/Melting range:** -117°C (OECD 102)
- **Boiling point/Boiling range:** 78°C (OECD 103)

- **Flash point:** 10°C (DIN 51755)

- **Flammability (solid, gaseous):** Highly flammable.

- **Ignition temperature:** 425°C (DIN 51794)

- **Danger of explosion:** Forms explosive gases/fumes.

· Explosion limits:

- **Lower:** 3.5 Vol %
- **Upper:** 15 Vol %

- **Vapour pressure at 20°C:** 59 hPa

- **Density at 20°C:** 0.8 g/cm³ (DIN ISO 787)

· Solubility in / Miscibility with

- **water:** Fully miscible.

- **pH-value at 20°C:** 7

- **Solvent content:** 100 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Materials to be avoided:**

Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.

- **Dangerous reactions** Develops readily flammable gases/fumes.

11 Toxicological information

· **Acute toxicity:**

64-17-5 ethanol

Oral LD₅₀ 5000 mg/kg (rat OECD 401)

Dermal LD₅₀ > 10000 mg/kg (rabbit)

Inhalative LC₅₀/4h > 1800 mg/l (rat OECD 401)

78-93-3 butanone

Oral LD₅₀ 3300 mg/kg (rat OECD 401)

LD₅₀/28d 5000 mg/kg (rabbit)

· **Primary irritant effect:**

- **on the eye OECD 405 (rabbit):** slightly irritant

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

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- **Subacute to chronic toxicity:**
Tissue modification after repeated oral application or inhalation (Rat). In the case of prolonged skin contact: Dermatitis, degreasing effect to the skin. literature
- **Additional toxicological information:**
*Reproduction toxicity:
 Influences the male reproduction system and the development of laboratory animals negatively. With the observance of the occupational threshold values however, there is no fear of a risk of embryo-toxicity.*
*Mutagenic status:
 Ames test (OECD 471) negative, but mutagenic activity proved by laboratory animal experiments. The mutagenic effects however are generally considered as neglectable, so there is no fear of mutagene damages with observance of the occupational threshold values.*
*Carcinogen status:
 With the observance of the occupational threshold values, no remarkable contribution to an increase of the cancer risk is to be expected.*

12 Ecological information

- **Information about elimination (persistence and degradability):**
- **Other information:** *The product is readily biodegradable.*
- **Behaviour in environmental systems:**
- **Mobility and bioaccumulation potential:**
Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.
- **Ecotoxicological effects:**
- **Acquatic toxicity:**

64-17-5 ethanol
IC₅₀ > 100 mg/l (scenedesmus subspicatus, OECD 201)
LC₅₀ > 2000 mg/l (leuciscus idus, 96 h, OECD 203)
- **Behaviour in sewage processing plants:**

64-17-5 ethanol
EC₅₀ > 5000 mg/l (daphnia magna, 48 h, OECD 202)
> 1000 mg/l (pseudomonas putida, DIN 38 421 Teil 8)
- **Additional ecological information:**
- **AOX-indication:**
The product doesn't contain organically bound halogen as per formulation. It will not increase the AOX value when discharged from treatment plant or into neutral waters.
- **According to the formulation contains the following heavy metals and compounds from the EU guideline NO. 76/464 EC:**
None.

13 Disposal considerations

- **Product:**
- **Recommendation** *Disposal must be made according to official regulations.*
- **Uncleaned packaging:**
- **Recommendation:** *Dispose of packaging according to regulations on the disposal of packagings.*

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14 Transport information

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 3 Flammable liquids.
- **Danger code (Kemler):** 33
- **UN-Number:** 1987
- **Packaging group:** II
- **Hazard label:** 3
- **Description of goods:** 1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ETHYL METHYL KETONE (METHYL ETHYL KETONE))

· **Inland shipping ADN:**

- **ADN/R Class:** 3

· **Maritime transport IMDG:**



- **IMDG Class:** 3
- **UN Number:** 1987
- **Label:** 3
- **Packaging group:** II
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No
- **Proper shipping name:** ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ETHYL METHYL KETONE (METHYL ETHYL KETONE))

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1987
- **Label:** 3
- **Packaging group:** II
- **Proper shipping name:** ALCOHOLS, N.O.S. (ETHANOL, ETHYL METHYL KETONE (METHYL ETHYL KETONE))

15 Regulatory information

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**



F Highly flammable

· **Risk phrases:**

11 Highly flammable.

· **Safety phrases:**

7/9 Keep container tightly closed and in a well-ventilated place.

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16 Keep away from sources of ignition - No smoking.

· **National regulations:**

· **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

· **Breakdown regulations:**

Critical quantity values according to the regulations on accidents should be adhered to.

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

11 Highly flammable.

36 Irritating to eyes.

66 Repeated exposure may cause skin dryness or cracking.

67 Vapours may cause drowsiness and dizziness.

· **Recommended restriction of use**

Only for industrial use. The fields of application are specified in the "Technical Information" belonging to the product(s). Any further intended application should be discussed with the manufacturer.

· **Department issuing MSDS:** Department UM

· **Sources**

IUCLID, International Uniform Chemical Database (European Commission)

GESTIS-substances data base (BIA)

· * **Data compared to the previous version altered.**

GB