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

1.1. Product identifier
928 Scheibenklar Pure MP92800K30AB

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

1.3. Details of the supplier of the safety data sheet

Company name: TUNAP GmbH & Co. KG
Street: Bürgermeister-Seidl-Str. 2
Place: D-82515 Wolfratshausen
Telephone: +49 (0) 8171/1600 - 0
Fax: +49 (0) 8171/1600 - 40
E-mail: sdb@tunap.com
Internet: www.tunap.com

1.4. Emergency telephone number:
+49 (0) 30 30 686 790 (Giftnotruf Berlin)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2

Hazard Statements:
Highly flammable liquid and vapour. Causes serious eye irritation.

2.2. Label elements
Regulation (EC) No. 1272/2008

Signal word: Danger

Pictograms:

Hazard statements
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe vapours.
P280 Wear eye/face protection.
P233 Keep container tightly closed.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/attention if you feel unwell.

2.3. Other hazards
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
<td>50 - &lt;= 100 %</td>
<td>200-578-6</td>
<td>603-002-00-5</td>
<td>01-2119457610-43</td>
<td>Flam. Liq. 2, Eye Irrit. 2; H225 H319</td>
</tr>
<tr>
<td>107-21-1</td>
<td>ethanediol, ethylene glycol</td>
<td>5 - &lt; 10 %</td>
<td>203-473-3</td>
<td></td>
<td>01-2119456816-28</td>
<td>Acute Tox. 4, STOT RE 2; H302 H373</td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.

Labelling for contents according to Regulation (EC) No 648/2004

< 5 % anionic surfactants, < 5 % non-ionic surfactants.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation
Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After contact with eyes
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion
Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Headache, nausea, dizziness, fatigue, skin irritation

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media
High power water jet.
5.2. Special hazards arising from the substance or mixture

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information
Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

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). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Observe instructions for use.
Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
When using do not eat, drink, smoke, sniff.
Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking.

Further information on handling
Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed. Observe legal regulations and provisions.

Hints on joint storage
Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions
Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1</td>
<td>Ethane-1,2-diol, vapour</td>
<td>20</td>
<td>52</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
<td>104</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethanol</td>
<td>1000</td>
<td>1920</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Additional advice on limit values

- a no restriction
- b End of exposure or shift
- c in long-term exposure: after several shifts
- d prior to next shift

TWA (EC): time-weighted average
U: Urea
B: Blood

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures
Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection
Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection
Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min
Thickness of the glove material 0,45 mm
DIN EN 374

Skin protection
Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
When exceeding the relevant workplace exposure limits, note the following:
Suitable respiratory protective equipment: Combination filter device (DIN EN 141).
Filtering device with filter or ventilator filtering device of type: A
Observe the wear time limits as specified by the manufacturer.
Observe legal regulations and provisions.

Environmental exposure controls
Observe legal regulations and provisions.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: colorless, clear
Odour: alcoholic

Test method
pH-Value (at 20 °C): 11,08 DIN 19268

Changes in the physical state
Melting point: not determined
Initial boiling point and boiling range: 78 °C
Sublimation point: No information available.
Softening point: No information available.
Flash point: 21,5 °C ISO 3679

Flammability
Solid: not applicable
Gas: not applicable
Lower explosion limits: 3,5 vol. %
Upper explosion limits: 15 vol. %
Ignition temperature: 400 °C

Auto-ignition temperature
Solid: not applicable
Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties
Not oxidising.

Vapour pressure: not determined
Density (at 20 °C): 0,8999 g/cm³ DIN 51757
Water solubility: easily soluble

Solubility in other solvents
not determined
Partition coefficient: not determined
Viscosity / dynamic: No information available. DIN 53019-1
Viscosity / kinematic: < 7 mm²/s DIN EN ISO 3104
(at 40 °C)
Flow time: No information available. DIN EN ISO 2431
(at 20 °C)
Vapour density: not determined
Evaporation rate: not determined
Solvent separation test: No information available.
Solvent content: No information available.

9.2. Other information
SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges.

10.5. Incompatible materials

Oxidizing agents. Pyrophoric or self-heating substances.

10.6. Hazardous decomposition products

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

No information available.

Acute toxicity

Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
<td>oral</td>
<td>LD50</td>
<td>6200 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;20000 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation (4 h)</td>
<td>vapour</td>
<td>LC50</td>
<td>95.6 mg/l</td>
</tr>
<tr>
<td>107-21-1</td>
<td>ethanediol, ethylene glycol</td>
<td>oral</td>
<td>LD50</td>
<td>1600 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;3500 mg/kg</td>
<td>Rabbit</td>
</tr>
</tbody>
</table>

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction
Based on available data, the classification criteria are not met.
No indications of human carcinogenicity exist.
No indications of human germ cell mutagenicity exist.
No indications of human reproductive toxicity exist.

**STOT-single exposure**
Based on available data, the classification criteria are not met.

**STOT-repeated exposure**
Based on available data, the classification criteria are not met.

**Aspiration hazard**
Based on available data, the classification criteria are not met.

**Specific effects in experiment on an animal**
No information available.

**Additional information on tests**
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

### SECTION 12: Ecological information

#### 12.1. Toxicity
Aquatic toxicity: The classification criteria for this hazard class are not met by definition.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>14200 mg/l</td>
<td>96 h</td>
<td>Pimephales promelas (fathead minnow)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>9268 - 14221 mg/l</td>
<td>48 h</td>
<td>Daphnia magna</td>
<td>IUCLID</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Acute fish toxicity</th>
<th>LC50</th>
<th>72860 mg/l</th>
<th>96 h</th>
<th>Pimephales promelas</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>107-21-1</td>
<td>ethanediol, ethylene glycol</td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>6500 - 13000 mg/l</td>
<td>96 h</td>
<td>Selenastrum capricornutum</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>&gt; 100 mg/l</td>
<td>48 h</td>
<td>Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish toxicity</td>
<td>NOEC</td>
<td>72860 mg/l</td>
<td>7 d</td>
<td>Pimephales promelas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crustacea toxicity</td>
<td>NOEC</td>
<td>8590 mg/l</td>
<td>7 d</td>
<td>Ceriodaphnia spec</td>
<td></td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability
The product has not been tested.

#### 12.3. Bioaccumulative potential
The product has not been tested.

**Partition coefficient n-octanol/water**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
<td>-0.31</td>
</tr>
<tr>
<td>107-21-1</td>
<td>ethanediol, ethylene glycol</td>
<td>-1.36</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil
The product has not been tested.

#### 12.5. Results of PBT and vPvB assessment
The product has not been tested.

#### 12.6. Other adverse effects
No information available.
Further information
No special environmental measures are necessary.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>070704</td>
<td>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; hazardous waste</td>
</tr>
</tbody>
</table>

Waste disposal number of used product

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>070704</td>
<td>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; hazardous waste</td>
</tr>
</tbody>
</table>

Waste disposal number of contaminated packaging

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>150110</td>
<td>WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste</td>
</tr>
</tbody>
</table>

Contaminated packaging
Water (with cleaning agent). Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number:</td>
<td>UN 1170</td>
</tr>
<tr>
<td>14.2. UN proper shipping name:</td>
<td>ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es):</td>
<td>3</td>
</tr>
<tr>
<td>14.4. Packing group:</td>
<td>II</td>
</tr>
<tr>
<td>Hazard label:</td>
<td>3</td>
</tr>
<tr>
<td>Classification code:</td>
<td>F1</td>
</tr>
<tr>
<td>Special Provisions:</td>
<td>144 601</td>
</tr>
<tr>
<td>Limited quantity:</td>
<td>1 L</td>
</tr>
<tr>
<td>Excepted quantity:</td>
<td>E2</td>
</tr>
<tr>
<td>Transport category:</td>
<td>2</td>
</tr>
<tr>
<td>Hazard No:</td>
<td>33</td>
</tr>
<tr>
<td>Tunnel restriction code:</td>
<td>D/E</td>
</tr>
</tbody>
</table>

Inland waterways transport (ADN)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number:</td>
<td>UN 1170</td>
</tr>
<tr>
<td>14.2. UN proper shipping name:</td>
<td>ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es):</td>
<td>3</td>
</tr>
<tr>
<td>14.4. Packing group:</td>
<td>II</td>
</tr>
<tr>
<td>Hazard label:</td>
<td>3</td>
</tr>
<tr>
<td>Classification code:</td>
<td>F1</td>
</tr>
<tr>
<td>Special Provisions:</td>
<td>144 601</td>
</tr>
<tr>
<td>Limited quantity:</td>
<td>1 L</td>
</tr>
<tr>
<td>Excepted quantity:</td>
<td>E2</td>
</tr>
</tbody>
</table>

Marine transport (IMDG)
## 14. Transport information

### 14.1. UN number:
UN 1170

### 14.2. UN proper shipping name:
ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

### 14.3. Transport hazard class(es):
3

### 14.4. Packing group:
II

#### Hazard label:
3

#### Marine pollutant:
No

#### Special Provisions:
144

#### Limited quantity:
1 L

#### EmS:
F-E, S-D

### Other applicable information (maritime transport)
- Limited quantity: E2

### Air transport (ICAO-TI/IATA-DGR)

#### 14.1. UN number:
UN 1170

#### 14.2. UN proper shipping name:
ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

#### 14.3. Transport hazard class(es):
3

#### 14.4. Packing group:
II

#### Hazard label:
3

#### Special Provisions:
A3 A58 A180

#### Limited quantity Passenger:
1 L

#### Passenger LQ:
Y341

#### Excepted quantity:
E2

#### IATA-packing instructions - Passenger:
353

#### IATA-max. quantity - Passenger:
5 L

#### IATA-packing instructions - Cargo:
364

#### IATA-max. quantity - Cargo:
60 L

### 14.5. Environmental hazards
ENVIRONMENTALLY HAZARDOUS: no

### 14.6. Special precautions for user
Warning: Combustible liquids.

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
not applicable

### SECTION 15: Regulatory information

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

##### EU regulatory information
- 2010/75/EU (VOC): No information available.
- 2004/42/EC (VOC): No information available.

##### Additional information
- Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

##### National regulatory information
- Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
- Water contaminating class (D): 1 - slightly water contaminating

##### Additional information
- 94/69/EC (21st ATP). The benzene content of the product is less than 0.1%. It applies the annotation P. Classification and labeling as carcinogenic is not necessary.
15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes
This data sheet contains changes from the previous version in section(s): 2,3,4,5,6,7,8,9,10,11,13,15,16.

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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level
WEL (UK): Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
STEL (EC) Short Term Exposure Limit
LC50: Lethal Concentration
EC50: half maximal Effective Concentration
ErC50: means EC50 in terms of reduction of growth rate

Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H373 May cause damage to kidneys through prolonged or repeated exposure by skin contact.

Further Information
Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]: Calculation method.
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.

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