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

1.1. Product identifier

129 Multi-Russentferner MP12900K03AB

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
Telefax: +49 (0) 8171/1600 - 40
Email: 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:
Skin corrosion/irritation: Skin Corr. 1
Serious eye damage/eye irritation: Eye Dam. 1

Hazard Statements:
Causes severe skin burns and eye damage.
Causes serious eye damage.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling
2-aminoethanol, ethanolamine

Signal word: Danger

Pictograms:

Hazard statements
H314 Causes severe skin burns and eye damage.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash … thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

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>
</tr>
</thead>
<tbody>
<tr>
<td>141-43-5</td>
<td>2-aminoethanol, ethanolamine</td>
<td>3 - &lt; 5 %</td>
<td>141-43-5</td>
<td>2-aminoethanol</td>
<td>3 - &lt; 5 %</td>
</tr>
</tbody>
</table>

Classification according to Regulation (EC) No. 1272/2008 [CLP]

- Acute Tox. 4
- Skin Corr. 1B
- STOT SE 3
- Aquatic Chronic 3; H332 H312 H302 H314 H335 H412

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

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
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
Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media
High power water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn.

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
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
Protect from frost. Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)
No information available.

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>141-43-5</td>
<td>2-Aminoethanol</td>
<td>1</td>
<td>2.5</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>7.6</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>
Additional advice on limit values

- a no restriction
- b End of exposure or end of shift
- c at long term exposure: after several previous shifts
- d before next shift

blood (B)
Urine (U)

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: P2
  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

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour:</td>
<td>amine-like</td>
</tr>
</tbody>
</table>

pH-Value (at 20 °C): 11,5

Changes in the physical state

- Initial boiling point and boiling range: 100 °C
- Density (at 20 °C): 1,01 g/cm³
- Water solubility: easily soluble
- Viscosity / dynamic: DIN 53019-1
SECTION 10: Stability and reactivity

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
Do not mix with acids.

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
There are no data available on the mixture itself.

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>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-43-5</td>
<td>2-aminoethanol, ethanolamine</td>
<td>oral</td>
<td>LD₅₀</td>
<td>1515 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD₅₀</td>
<td>1025 mg/kg</td>
<td>Rabbit</td>
<td>IUCLID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation vapour</td>
<td>ATE</td>
<td>11 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation (4 h) aerosol</td>
<td>LC₅₀</td>
<td>1,3 mg/l</td>
<td>Rat</td>
<td></td>
</tr>
</tbody>
</table>

Irritation and corrosivity
Causes severe skin burns and eye damage.

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
There are no data available on the mixture itself.

<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>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-43-5</td>
<td>2-aminoethanol, ethanolamine</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>150 mg/l</td>
<td>96</td>
<td>Onchorhynchus mykiss</td>
<td>IUCLID</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>22 mg/l</td>
<td>72</td>
<td>Desmodesmus subspicatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>65 mg/l</td>
<td>48</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
There are no data available on the mixture itself. AOX (mg/l): 0

12.3. Bioaccumulative potential
There are no data available on the mixture itself.

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>141-43-5</td>
<td>2-aminoethanol, ethanolamine</td>
<td>-1,91</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects
No information available.

Further information
The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

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
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; hazardous waste

Waste disposal number of used product
WASTE DISPOSAL NUMBER OF CONTAMINATED PACKAGING

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; hazardous waste

150110 WASTE PACKAGING; ABSORBENTS, WIPE CLOTH, 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

CONTAMINATED PACKAGING

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

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1719
14.2. UN proper shipping name: CAUSTIC ALKALI LIQUID, N.O.S. (2-aminoethanol, ethanolamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8
Classification code: C5
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 80
Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number: UN 1719
14.2. UN proper shipping name: CAUSTIC ALKALI LIQUID, N.O.S. (2-aminoethanol, ethanolamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8
Classification code: C5
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number: UN 1719
14.2. UN proper shipping name: CAUSTIC ALKALI LIQUID, N.O.S. (2-aminoethanol)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8
Special Provisions: 223, 274
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1719
14.2. UN proper shipping name: CAUSTIC ALKALI LIQUID, N.O.S. (2-aminoethanol)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8
Special Provisions: A3 A803
Limited quantity Passenger: 1 L
Passenger LQ: Y841
Excepted quantity: E1
IATA-packing instructions - Passenger: 852
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 856
IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards
ENVIRONMENTALLY HAZARDOUS: no

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

SECTION 16: Other information

Changes
This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,8,9,11,14,15.

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

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corr. 1: H314</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Eye Dam. 1: H318</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>
### Relevant H and EUH statements (number and full text)

- **H302** Harmful if swallowed.
- **H312** Harmful in contact with skin.
- **H314** Causes severe skin burns and eye damage.
- **H332** Harmful if inhaled.
- **H335** May cause respiratory irritation.
- **H412** Harmful to aquatic life with long lasting effects.

### Further Information

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

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.)