



Safety Data Sheet

according to Regulation (EC) No 1907/2006

ESKANOL EF-450H

Revision date: 26.04.2021

Product code: 00359-1296

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

1.1. Product identifier

ESKANOL EF-450H

Art.-No.

10025, 10026

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

Use of the substance/mixture

Hardener

1.3. Details of the supplier of the safety data sheet

Company name: TIP TOP Oberflächenschutz Elbe GmbH

Street: Heuweg 4

Place: D-06886 Wittenberg

Telephone: +49(0)3491/635-50

Telefax: +49(0)3491/635-552

Contact person: Laborleiter

Responsible Department: Responsible for the safety data sheet: sds@gbk-ingelheim.de

1.4. Emergency telephone number:

INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)
In England and Wales: NHS 111 In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Hazard Statements:

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

2,4,6-tris(dimethylaminomethyl)phenol

N,N-dimethyl-1,3-diaminopropane

Triethylenetetramine

Signal word: Danger

Pictograms:



Hazard statements

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

Precautionary statements

P260 Do not breathe vapour.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.



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- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Hardener based on aliphatic polyamines

Hazardous components

| CAS No | Chemical name | Quantity | | |
|------------|--|--------------|------------------|--------|
| | EC No | Index No | REACH No | |
| | GHS Classification | | | |
| 100-51-6 | Benzyl alcohol | | | < 30 % |
| | 202-859-9 | 603-057-00-5 | 01-2119492630-38 | |
| | Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319 | | | |
| 90-72-2 | 2,4,6-tris(dimethylaminomethyl)phenol | | | < 5 % |
| | 202-013-9 | 603-069-00-0 | 01-2119560597-27 | |
| | Acute Tox. 4, Skin Corr. 1C, Eye Dam. 1, Skin Sens. 1B; H302 H314 H318 H317 | | | |
| 109-55-7 | N,N-dimethyl-1,3-diaminopropane | | | < 5 % |
| | 203-680-9 | 612-061-00-6 | 01-2119486842-27 | |
| | Flam. Liq. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H226 H312 H302 H314 H318 H317 H335 | | | |
| 90640-67-8 | Triethylenetetramine | | | < 5 % |
| | 292-588-2 | | 01-2119487919-13 | |
| | Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H318 H317 H412 | | | |

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

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity | |
|------------|---|---------------------------------------|----------|--|
| | Specific Conc. Limits, M-factors and ATE | | | |
| 100-51-6 | 202-859-9 | Benzyl alcohol | < 30 % | |
| | inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = 1570 mg/kg | | | |
| 90-72-2 | 202-013-9 | 2,4,6-tris(dimethylaminomethyl)phenol | < 5 % | |
| | dermal: LD50 = 1242 mg/kg; oral: LD50 = 1670 mg/kg | | | |
| 109-55-7 | 203-680-9 | N,N-dimethyl-1,3-diaminopropane | < 5 % | |
| | dermal: ATE = 1100 mg/kg; oral: LD50 = 1870 mg/kg | | | |
| 90640-67-8 | 292-588-2 | Triethylenetetramine | < 5 % | |
| | dermal: ATE = 1100 mg/kg; oral: ATE = 500 mg/kg | | | |

SECTION 4: First aid measures



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4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.
In the event of persistent symptoms receive medical treatment.

After inhalation

Move to fresh air in case of accidental inhalation of vapours or decomposition products.
In the event of symptoms refer for medical treatment.

After contact with skin

Wash off immediately with soap and plenty of water.
Consult a doctor if skin irritation persists.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical treatment by eye specialist.

After ingestion

Do not induce vomiting.
Rinse mouth.
Never give anything by mouth to an unconscious person.
Summon a doctor immediately.
Induce vomiting only upon the advice of a physician.

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

Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

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

Treat symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, dry chemical, carbon dioxide (CO₂), water-spray.
Fire-extinguishing activities according to surrounding.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Fire may produce:
carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

Vapours are heavier than air and spread along ground.
The vapour/air mixture is explosive, even in empty, uncleaned receptacles.
Cool containers at risk with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Ensure adequate ventilation.
Remove persons to safety.
Keep away sources of ignition.



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For non-emergency personnel

Avoid contact with skin, eyes and clothing.
Do not breathe vapours.

For emergency responders

In case of vapour formation use respirator.
Use personal protective clothing.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/ground water.
Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

For containment

Prevent spread over a wide area (e.g. by containment or oil barriers).

For cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
Shovel into suitable container for disposal.
Clean contaminated surface thoroughly.

6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).
Information for disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Keep container tightly closed.
Use only in thoroughly ventilated areas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion

No special protective measures against fire required.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a dry, cool and well-ventilated place.
Pay attention to anti-explosion rules.
Protect against direct sun radiation.
Recommended storage temperature: 10°C - 30°C

Hints on joint storage

Incompatible with:
Oxidizing agents, Acids and bases.

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Hardener

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

No data available

8.2. Exposure controls



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Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Protective and hygiene measures

Do not inhale vapours.

Wash hands before breaks and immediately after handling the product.

When using do not eat, drink or smoke.

Avoid contact with skin, eyes and clothing.

Remove and wash contaminated clothes before re-use.

Eye/face protection

Tightly fitting goggles (EN 166).

Eye wash bottle with pure water (EN 15154).

Hand protection

Protective gloves resistant to chemicals made off viton, minimum coat thickness 0.7 mm, permeation resistance (wear duration) approx. 30 minutes, i.e. protective glove <Vitoject 890> made by www.kcl.de.

Splash protection: Protective gloves resistant to chemicals made off butyl, minimum coat thickness 0.7 mm, permeation resistance approx. 480 minutes, i.e. protective glove <Butoject 898> made by www.kcl.de.

This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.

Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

Skin protection

Long sleeved clothing (DIN EN ISO 6530)

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A) (EN 14387).

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | | |
|---|---------------------|--------------------|
| Physical state: | Liquid | |
| Colour: | Brown - Light brown | |
| Odour: | Amine like | |
| | | Test method |
| pH-Value (at 20 °C): | | n.d. |
| Changes in the physical state | | |
| Melting point: | | n.d. |
| Boiling point or initial boiling point and boiling range: | | n.d. |
| Sublimation point: | | n.a. |
| Softening point: | | n.d. |
| Flash point: | 94 °C | Calculated |
| Flammability | | |
| Solid/liquid: | | n.a. |
| Gas: | | n.a. |
| Explosive properties | | |
| The product is not explosive. | | |
| Lower explosion limits: | | n.d. |
| Upper explosion limits: | | n.d. |
| Auto-ignition temperature: | | n.d. |
| Self-ignition temperature | | |

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| | |
|--|--|
| Solid: | n.a. |
| Gas: | n.a. |
| Decomposition temperature: | n.d. |
| Oxidizing properties | |
| Not oxidising. | |
| Vapour pressure: | n.d. |
| Density (at 23 °C): | approx. 1,0 g/cm ³ ISO 2811-2 |
| Bulk density: | n.a. |
| Water solubility: (at 20 °C) | Immiscible |
| Solubility in other solvents | |
| n.d. | |
| Partition coefficient n-octanol/water: | n.d. |
| Viscosity / dynamic: (at 25 °C) | 980 - 1480 mPa·s ISO 2884-1 |
| Viscosity / kinematic: | n.d. |
| Flow time: | n.d. |
| Relative vapour density: | n.d. |
| Evaporation rate: | n.d. |
| Solvent separation test: | n.d. |
| Solvent content: | 0 % |

9.2. Other information

No data available

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

No decomposition if stored and applied as directed.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactions with acids, alkalies and oxidizing agents

10.4. Conditions to avoidTo avoid thermal decomposition, do not overheat.
Protect against direct sun radiation.**10.5. Incompatible materials**

Oxidizing agents, Acids and bases.

10.6. Hazardous decomposition productsNo known hazardous decomposition products.
Fire may produce:
Carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x)**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**



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

No toxicological data available.

ATEmix/oral: > 2000 mg/kg

ATEmix/dermal: > 2000 mg/kg

ATEmix/inhalation: > 20 mg/l/4 h [vapour]

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Sensitising effects

May cause an allergic skin reaction. (2,4,6-tris(dimethylaminomethyl)phenol;

N,N-dimethyl-1,3-diaminopropane; Triethylenetetramine)

Carcinogenic/mutagenic/toxic effects for reproduction

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

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.

Additional information on tests

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

11.2. Information on other hazards

Endocrine disrupting properties

No data available

SECTION 12: Ecological information

12.1. Toxicity

Ecological data are not available.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Hazardous water pollutant.

Further information

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Can be incinerated, when in compliance with local regulations.

Where possible recycling is preferred to disposal.

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List of Wastes Code - residues/unused products

080411 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); adhesive and sealant sludges containing organic solvents or other hazardous substances; hazardous waste

Contaminated packaging

Contaminated packagings are to be treated like the product itself.

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Packaging that cannot be cleaned should be disposed of like the product.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

UN 2735

14.2. UN proper shipping name:POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(N,N-dimethyl-1,3-diaminopropane,
2,4,6-tris(dimethylaminomethyl)phenol)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

II

Hazard label:

8



Classification code:

C7

Special Provisions:

274

Limited quantity:

1 L / 30 kg

Excepted quantity:

E2

Transport category:

2

Hazard No:

80

Tunnel restriction code:

E

Inland waterways transport (ADN)

14.1. UN number:

UN 2735

14.2. UN proper shipping name:POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(N,N-dimethyl-1,3-diaminopropane,
2,4,6-tris(dimethylaminomethyl)phenol)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

II

Hazard label:

8



Classification code:

C7

Special Provisions:

274

Limited quantity:

1 L / 30 kg

Excepted quantity:

E2

Marine transport (IMDG)

14.1. UN number:

UN 2735

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14.2. UN proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(N,N-dimethyl-1,3-diaminopropane,
2,4,6,-tris(dimethylaminomethyl)phenol)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Marine pollutant: No
Special Provisions: 274
Limited quantity: 1 L / 30 kg
Excepted quantity: E2
EmS: F-A, S-B
Segregation group: 18 - alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2735

14.2. UN proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(N,N-dimethyl-1,3-diaminopropane,
2,4,6,-tris(dimethylaminomethyl)phenol)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Special Provisions: A3 A803
Limited quantity Passenger: 0.5 L
Passenger LQ: Y840
Excepted quantity: E2
IATA-packing instructions - Passenger: 851
IATA-max. quantity - Passenger: 1 L
IATA-packing instructions - Cargo: 855
IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Handle in accordance with good industrial hygiene and safety practice.

14.7. Maritime transport in bulk according to IMO instruments

The transport takes place only in approved and appropriate packaging.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

2004/42/EC (VOC): < 30 %



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Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,3,5,6,7,8,9,10,11,12,13,14,15.

Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure

IMDG = International Maritime Code for Dangerous Goods

IATA/ICAO = International Air Transport Association / International Civil Aviation Organization

MARPOL = International Convention for the Prevention of Pollution from Ships

IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

REACH = Registration, Evaluation, Authorization and Restriction of Chemicals

CAS = Chemical Abstract Service

EN = European norm

ISO = International Organization for Standardization

DIN = Deutsche Industrie Norm

PBT = Persistent Bioaccumulative and Toxic

vPvB = Very Persistent and very Bio-accumulative

LD = Lethal dose

LC = Lethal concentration

EC = Effect concentration

IC = Median immobilisation concentration or median inhibitory concentration

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

| Classification | Classification procedure |
|---------------------|--------------------------|
| Skin Corr. 1B; H314 | Calculation method |
| Eye Dam. 1; H318 | Calculation method |
| Skin Sens. 1; H317 | Calculation method |

Relevant H and EUH statements (number and full text)

| | |
|------|--|
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |

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| | |
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| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H412 | Harmful to aquatic life with long lasting effects. |

Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

(n.a. = not applicable; n.d. = not determined)

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