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

1.1. Product identifier

ESKANOL M50 HARDENER

Art.-No.

10095, 10096, 10097, 10098

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

Manufacturer

Company name:	TIP TOP Oberflaechenschutz Elbe GmbH
Street:	Heuweg 4
Place:	D-06886 Wittenberg
Telephone:	+49(0)3491/635-50 Telefax: +49(0)3491/635-552
Responsible Department:	Responsible for the safety data sheet: sds@gbk-ingelheim.de

Supplier

Company name:	REMA TIP TOP INDUSTRY UK LTD
Street:	Plumtree Industrial Estate, Harworth
Place:	Doncaster, DN11 8EW, South Yorkshire
Telephone:	+44 (0)1302 711233
Internet:	www.rema-tiptop.co.uk

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

GB CLP Regulation

Self-react. D; H242
Repr. 2; H361d
Acute Tox. 4; H332
Acute Tox. 4; H302
Skin Corr. 1B; H314
Eye Dam. 1; H318
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

1-isopropyl-2,2-dimethyltrimethylene diisobutyrate
Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide
Hydrogen peroxide

Signal word: Danger

Pictograms:

Hazard statements

H242	Heating may cause a fire.
H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H361d	Suspected of damaging the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234	Keep only in original packaging.
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.
P405	Store locked up.
P411+P235	Store at temperatures not exceeding 30 °C/86 °F. Keep cool.

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.
The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture containing following substances with additives

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
6846-50-0	1-isopropyl-2,2-dimethyltrimethylene diisobutyrate			45 - 50 %
	229-934-9		01-2119451093-47	
	Repr. 2, Aquatic Chronic 3; H361d H412			
1338-23-4	Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide			30 - 35 %
	700-954-4		01-2119514691-43	
	Self-react. D, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H242 H332 H302 H314 H318			
123-42-2	Diacetone alcohol			10 - < 15 %
	204-626-7	603-016-00-1	01-2119473975-21	
	Flam. Liq. 3, Repr. 2, Eye Irrit. 2, STOT SE 3; H226 H361d H319 H335			
7722-84-1	Hydrogen peroxide			2 - 4 %
	231-765-0	008-003-00-9	01-2119485845-22	
	Ox. Liq. 1, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1, STOT SE 3, Aquatic Chronic 3; H271 H332 H302 H314 H318 H335 H412			
78-93-3	Butanone			2 - 4 %
	201-159-0	606-002-00-3	01-2119457290-43	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			

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		
1338-23-4	700-954-4	Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	30 - 35 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg		
123-42-2	204-626-7	Diacetone alcohol	10 - < 15 %
	dermal: LD50 = 13630 mg/kg; oral: LD50 = 2520 mg/kg Eye Irrit. 2; H319: >= 10 - 100		
7722-84-1	231-765-0	Hydrogen peroxide	2 - 4 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = 3000 mg/kg; oral: LD50 = 418 - 445 mg/kg Ox. Liq. 1; H271: >= 70 - 100 Ox. Liq. 2; H272: >= 50 - < 70 Skin Corr. 1A; H314: >= 70 - 100 Skin Corr. 1B; H314: >= 50 - < 70 Skin Irrit. 2; H315: >= 35 - < 50 Eye Dam. 1; H318: >= 8 - < 50 Eye Irrit. 2; H319: >= 5 - < 8 STOT SE 3; H335: >= 35 - 100		
78-93-3	201-159-0	Butanone	2 - 4 %
	dermal: LD50 = > 8000 mg/kg; oral: LD50 = 3400 mg/kg		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.
Adhere to personal protective measures when giving first aid.
Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

After inhalation

Supply fresh air, if required oxygen, consult a physician.

If patient is not breathing, apply artificial respiration.
Remove the casualty into fresh air and keep him immobile.
In case of the person being unconscious put him/her in a stable side position.

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

Summon a doctor immediately.
Rinse out mouth and give plenty of water to drink.
Never give anything by mouth to an unconscious person.
Induce vomiting only upon the advice of a physician.

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

Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.
Suspected of damaging the unborn child.

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.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Fire may produce:
carbon monoxide and carbon dioxide
Hydrocarbons

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

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 advice

Ensure adequate ventilation.
Keep away sources of ignition.

For non-emergency personnel

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

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.

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

Shovel into suitable container for disposal.
Soak up with inert absorbent material (e.g. vermiculite, clean sand).
Dilute larger quantities of desensitization agent (e.g. fuel oil) to < 10% before disposal.
Do not keep container sealed.

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

Do not breathe vapours.
Wash hands before breaks and at the end of workday.
Keep away from acids, bases, heavy metal salts and reducing agents.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.
Keep away from open flames, hot surfaces and sources of ignition.
Use explosion-proof equipment / fittings and non-sparking tools.

Advice on general occupational hygiene

Do not inhale vapours.
Avoid contact with eyes and skin.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.
Remove and wash contaminated clothing before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in original container.
Keep container tightly closed in a dry, cool and well-ventilated place.
Protect against direct sun radiation.
Recommended storage temperature: -10°C - 30°C

Hints on joint storage

Incompatible with:
Reducing agents., Heavy metal salts, 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

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
123-42-2	4-Hydroxy-4-methyl-pentan-2-one	50	241		TWA (8 h)	WEL
		75	362		STEL (15 min)	WEL
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
7722-84-1	Hydrogen peroxide	1	1.4		TWA (8 h)	WEL
		2	2.8		STEL (15 min)	WEL
1338-23-4	Methyl ethyl ketone peroxides (MEKP)	0.2	1.5		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

8.2. Exposure controls

Appropriate engineering controls

Pay attention to anti-explosion protection rules.
Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly fitting goggles (EN 166).
Eye wash bottle with pure water (EN 15154).

Hand protection

Chemical protective gloves made of nitrile, nitrile/cotton, butyl or neoprene, with a minimum thickness of 0.7 mm, permeation time of approx. 480 minutes.
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.
Pls. find examples in the protective gloves database under: http://bestglove.com/site/chemrest/

Skin protection

Long sleeved clothing (DIN EN ISO 6530)
Apron (EN 467).

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: Colourless
Odour: Characteristic

		Test method
Changes in the physical state		
Melting point/freezing point:	- 20 °C	
Boiling point or initial boiling point and boiling range:	Decomposition	
Sublimation point:	Decomposition	

Softening point:	n.d.
Pour Point:	
Flash point:	84 °C CC
Flammability	
Solid/liquid:	n.a.
Explosive properties	
The product is considered non-explosive; nevertheless explosive vapour/air mixture can be generated.	
Lower explosion limits:	n.a.
Upper explosion limits:	n.a.
Auto-ignition temperature:	200 °C
Self-ignition temperature	
Solid:	n.a.
Gas:	n.a.
Decomposition temperature:	70 °C
Viscosity / dynamic:	16,60 mPa·s
Flow time:	n.d.
Water solubility: (at 20 °C)	> 500 g/L
Solubility in other solvents	
n.d.	
Partition coefficient n-octanol/water:	n.d.
Vapour pressure: (at 20 °C)	0,0628 hPa
Relative density:	1,03
Bulk density:	n.a.
Relative vapour density:	n.d.

9.2. Other information

Information with regard to physical hazard classes

Oxidizing properties

Organic peroxide type D, liquid

Other safety characteristics

Evaporation rate: n.d.

Further Information

SADT + 70°C

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored normally.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with:
Soil, rust, chemicals, strong acids and bases and accelerators (heavy metal salts, amines).

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

Self-Accelerating decomposition temperature (SADT) from 60°C (SADT).

10.5. Incompatible materials

Soil, rust, chemicals, strong acids and bases and accelerators (heavy metal salts, amines).

10.6. Hazardous decomposition products

Fire may produce:
Carbon monoxide and carbon dioxide
Hydrocarbons

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

Harmful if inhaled.
Harmful if swallowed.
No toxicological data available.

ATEmix calculated

ATE (oral) 1303 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) 3,968 mg/l

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (1-isopropyl-2,2-dimethyltrimethylene diisobutyrate; Diacetone alcohol)
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: 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

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

Low hazard to waters.

Further information

Do not release undiluted into wastewater or drainage ditch.
Do not release undiluted or in higher quantities into the groundwater, sewerage or waters.

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.

List of Wastes Code - residues/unused products

080409 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); waste adhesives and sealants containing organic solvents or other hazardous substances; hazardous waste

Contaminated packaging

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 or ID number:	UN 3105
14.2. UN proper shipping name:	ORGANIC PEROXIDE TYPE D, LIQUID (Butanone peroxide)
14.3. Transport hazard class(es):	5.2
14.4. Packing group:	-
Hazard label:	5.2

Classification code:	P1
Special Provisions:	122 274
Limited quantity:	125 mL / 30 kg
Excepted quantity:	E0
Transport category:	2
Tunnel restriction code:	D

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3105
14.2. UN proper shipping name:	ORGANIC PEROXIDE TYPE D, LIQUID (Butanone peroxide)
14.3. Transport hazard class(es):	5.2
14.4. Packing group:	-
Hazard label:	5.2

Classification code:	P1
Special Provisions:	122 274
Limited quantity:	125 mL / 30 kg
Excepted quantity:	E0

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3105
14.2. UN proper shipping name:	ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)
14.3. Transport hazard class(es):	5.2
14.4. Packing group:	-
Hazard label:	5.2

Marine pollutant:	No
Special Provisions:	122, 274
Limited quantity:	125 mL / 30 kg
Excepted quantity:	E0
EmS:	F-J, S-R

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3105
14.2. UN proper shipping name:	ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)
14.3. Transport hazard class(es):	5.2
14.4. Packing group:	-
Hazard label:	5.2

Special Provisions:	A20 A150 A802
Limited quantity Passenger:	Forbidden
Passenger LQ:	Forbidden
Excepted quantity:	E0
IATA-packing instructions - Passenger:	570
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	570
IATA-max. quantity - Cargo:	10 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, Entry 40, Entry 75

Directive 2004/42/EC on VOC in paints and varnishes:	< 20 %
Information according to Directive 2012/18/EU (SEVESO III):	P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

Additional information

This product is regulated by Annex II of Regulation (EU) 2019/1148 on the marketing and use of explosives precursors. All suspicious transactions and significant disappearances and thefts have to be reported to the responsible national contact point. Sales personnel at all trading levels has to be instructed.

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):	1 - slightly hazardous to water

Additional information

Consider Chemical prohibition regulation.

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): 2,9,12.

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 GB CLP Regulation

Classification	Classification procedure
Self-react. D; H242	On basis of test data
Repr. 2; H361d	Calculation method
Acute Tox. 4; H332	Calculation method
Acute Tox. 4; H302	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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 relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)