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

1.1. Product identifier

TIP TOP COROFLAKE 23 / TIP TOP COROFLAKE 23 T

Art.-No.

Tip Top Coroflake 23: 590 0056, 590 0057, 590 0514
Tip Top Coroflake 23 T: 590 0060

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

Use of the substance/mixture

Coating material

1.3. Details of the supplier of the safety data sheet

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 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) England and Wales: NHS Direct - 0845 4647; Scotland: NHS 24 - 08454 24 24 24

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: Xn - Harmful, Xi - Irritant
R phrases:
Possible risk of harm to the unborn child.
Flammable.
Harmful by inhalation.
Irritating to eyes, respiratory system and skin.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.

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

Hazard categories:
Flammable liquid: Flam. Liq. 3
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Reproductive toxicity: Repr. 2
Specific target organ toxicity - single exposure: STOT SE 3
Specific target organ toxicity - repeated exposure: STOT RE 1
Hazard Statements:
Flammable liquid and vapour.
Harmful if inhaled.
May cause respiratory irritation.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
Causes damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazardous components which must be listed on the label

Styrene

Signal word:	Danger
Pictograms:	GHS02-GHS07-GHS08

Hazard statements

H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

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.
P260	Do not breathe vapour.
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/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.
P405	Store locked up.

Special labelling of certain mixtures

EUH208	Contains Fatty acids, C6-C19, branched, Co(2+)salts. May produce an allergic reaction.

2.3. Other hazards

Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Epoxide-vinyl ester-resin in styrene

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
202-851-5	Styrene	< 35 %
100-42-5	Repr. Cat. 3, Xn - Harmful, Xi - Irritant R63-10-20-36/38-48/20	
601-026-00-0	Flam. Liq. 3, Repr. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1, Asp. Tox. 1; H226 H361d H332 H315 H319 H335 H372 H304	
01-2119457861-32		
201-204-4	Methacrylic acid	< 2,5 %
79-41-4	C - Corrosive, Xn - Harmful R21/22-35	
607-088-00-5	Acute Tox. 4, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1A, STOT SE 3; H302 H312 H332 H314 H335	
01-2119463884-26		
200-880-8	Tetramethylammonium chloride	< 1 %
75-57-0	T - Toxic, Xi - Irritant, N - Dangerous for the environment R24/25-38-51-53	
	Acute Tox. 2, Acute Tox. 3, Skin Irrit. 2, STOT SE 1, Aquatic Chronic 2; H300 H311 H315 H370 H411	
01-2119970924-26		
270-066-5	Fatty acids, C6-C19, branched, Co(2+)salts	< 1 %
68409-81-4	Xn - Harmful, Xi - Irritant R22-38-43	
	Acute Tox. 4, Skin Irrit. 2, Skin Sens. 1; H302 H315 H317	

Full text of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Remove contaminated soaked clothing immediately.
In the event of persistent symptoms receive medical treatment.
Take away from danger area and lay down affected person.

After inhalation
Move to fresh air in case of accidental inhalation of vapours.
Seek medical treatment immediately.

After contact with skin
Wash off immediately with soap and plenty of water.
Treat subsequently with skin cream.
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.
Consult (eye) doctor immediately.

After ingestion
Do not induce vomiting.
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 inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
Causes damage to organs through prolonged or repeated exposure. (the ear)
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
Irritant/corrosive, flammable as well as toxic distillation gases (carbonization gases).

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

In case of vapour formation use respirator.
Ensure adequate ventilation.
Remove persons to safety.
Use personal protective clothing.
Keep away sources of ignition.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

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.
Vapours are heavier than air and spread along ground.
Use only in thoroughly ventilated areas.
Provide suitable extraction at the processing machines.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.
Do not smoke.
Take precautionary measures against static discharges.
Use only explosion-proof equipment.

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.
Avoid temperatures above 50°C.

Advice on storage compatibility
Incompatible with:
Oxidizing agents, Metal halogenides, Peroxides

Further information on storage conditions
Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Coating material

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
1332-58-7	Kaolin respirable dust	-	2		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
79-41-4	Methacrylic acid	20	72		TWA (8 h)	WEL
		40	143		STEL (15 min)	WEL
12001-26-2	Mica, total inhalable	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
100-42-5	Styrene	100	430		TWA (8 h)	WEL
		250	1080		STEL (15 min)	WEL
13463-67-7	Titanium dioxide, respirable	-	4		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls
Ensure adequate ventilation, especially in confined areas.
Pay attention to explosion protection guidelines.

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.
Treat subsequently with skin cream.
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
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 (EN 368).
Solvent-resistant 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:	Yellowish / Grey	
Odour:	Pungent	
Flash point:	35 °C	
Lower explosion limits:	1,1 vol. %	
Upper explosion limits:		
Vapour pressure: (at 20 °C)	6 hPa	
Density:	1,2 g/cm³	
Water solubility: (at 20 °C)	Immiscible	
Ignition temperature:	490 °C	
Viscosity / dynamic:	2750 - 3250 mPa·s	
Viscosity / kinematic: (at 40 °C)	> 20,5 mm²/s	
Flow time:	> 40 s	Ford beaker, no. 6

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 oxidizing agents.
Reactions with peroxides.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.
Vapour/air mixtures are explosive at intensive warming.
Heating can release vapours which can be ignited.
Avoid temperatures above 50°C.
If heating up polymerisation.

10.5. Incompatible materials

Metal halogenides, oxidizing agents, Peroxides

10.6. Hazardous decomposition products

Irritant/corrosive, flammable as well as toxic distillation gases (carbonization gases).
Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity
Harmful if inhaled.
No toxicological data available.
Styrene
LD50/oral/rat: 5000 mg/kg
LD50/dermal/rat: > 2000 mg/kg
LC50/inhalation/rat: 11,8 mg/l/4h

Irritation and corrosivity
Causes serious eye irritation.
Causes skin irritation.

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

STOT-single exposure
May cause respiratory irritation. (Styrene), (Methacrylic acid)

Severe effects after repeated or prolonged exposure
Causes damage to organs through prolonged or repeated exposure. (Styrene)

Carcinogenic/mutagenic/toxic effects for reproduction
Suspected of damaging the unborn child. (Styrene)

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.

Practical experience

Other observations
Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

SECTION 12: Ecological information

12.1. Toxicity
Ecological data are not available.
Styrene
LC50/Pimephales promelas/96 h = 4,02 mg/kg
EC50/Daphnia magna/48 h = 4,7 mg/kg
EC50/Pseudokirchneriela subcapitata/72 h > 4,9 mg/kg

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. Other adverse effects
Hazardous water pollutant.
Product is toxic to fish and their nutrient animals.

Further information
Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Can be incinerated, when in compliance with local regulations.
Where possible recycling is preferred to disposal.

Waste disposal number of waste from 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 dangerous substances Classified as 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:	UN1866
14.2. UN proper shipping name:	Resin solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Classification code:	F1
Limited quantity:	5 L / 30 kg
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

Other applicable information (land transport)
Viscous substance - excepted quantity if in containers with a capacity up to 450 l (subsection 2.2.3.1.5 ADR).

Inland waterways transport (ADN)

14.1. UN number:	UN1866
14.2. UN proper shipping name:	Resin solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Classification code:	F1
Limited quantity:	5 L / 30 kg

Other applicable information (inland waterways transport)
Viscous substance - excepted quantity if in containers with a capacity up to 450 l (subsection 2.2.3.1.5 ADN).

Marine transport (IMDG)

14.1. UN number:	UN1866
14.2. UN proper shipping name:	Resin solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Marine pollutant:	No
Limited quantity:	5 L / 30 kg
EmS:	F-E, S-E

Other applicable information (marine transport)
Viscous substance - excepted quantity if in containers with a capacity up to 30 l (subsection 2.3.2.5 IMDG Code).

Air transport (ICAO)

14.1. UN number:	UN1866
14.2. UN proper shipping name:	Resin solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3

Limited quantity Passenger:	Y344 / 10 L
IATA-packing instructions - Passenger:	355
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	366
IATA-max. quantity - Cargo:	220 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. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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

1999/13/EC (VOC): < 5 %; < 90 g/l

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

15.2. Chemical safety assessment

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

SECTION 16: Other information

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

LD = Lethal dose
LC = Lethal concentration
EC = Effect concentration
IC = Median immobilisation concentration or median inhibitory concentration

Relevant R-phrases (Number and full text)

10	Flammable.
20	Harmful by inhalation.
21/22	Harmful in contact with skin and if swallowed.
22	Harmful if swallowed.
24/25	Toxic in contact with skin and if swallowed.
35	Causes severe burns.
36/38	Irritating to eyes and skin.
38	Irritating to skin.
43	May cause sensitisation by skin contact.
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
51	Toxic to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.
63	Possible risk of harm to the unborn child.

Relevant H- and EUH-phrases (Number and full text)

H226	Flammable liquid and vapour.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
EUH208	Contains Fatty acids, C6-C19, branched, Co(2+)salts. May produce an allergic reaction.

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.)