

Safety Data Sheet

TI 35 ES**1. Identification of the substance/mixture and of the company/ undertaking****1.1 Product identifier**

Trade name: TI 35 ES
 Synonyms: none

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

Use of the Substance/
 Mixture: Electronic industry, Intermediate for electronic industry

1.3 Details of the supplier of the safety data sheet

Company: MicroChemicals GmbH
 Nicolaus-Otto-Str. 39
 D-89079 Ulm
 Germany

Phone: +49 (0) 731 977343 0
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 E-Mail address: msds@microchemicals.de

Responsible/
 Issuing person: Dr. Christian Koch

1.4 Emergency telephone

Emergency telephone: Tel.: +49 (0) 178 782 51 98 or
 Tel.: +49 (0) 731 36 080 409

2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquids, Category 3
 H226: Flammable liquid and vapour.
 H318: Causes serious eye damage
 H335: May causes respiratory irritation.

Classification (67/548/EEC, 1999/45/EC)

R10: Flammable.
 R37: Irritating to respiratory system.
 R41: Risk of serious damage to eyes.

Signal word: Warning

Hazard statements: H226: Flammable liquid and vapour.
 H318: Causes serious eye damage
 H335: May causes respiratory irritation.

Precautionary statements: Prevention:
 P210: Keep away from heat/sparks/open flames/ hot surfaces,- Not smoking
 P233: Keep container tightly closed.
 P280: Wear protective gloves/ protective clothing/ eye and face protection.
 Response:
 P303+ P361+ P353: IF ON SKIN: Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P305+ P351+ P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do. Continue rinsing.
 P370+ P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P310: Immediately call a POISON CENTER or doctor.
 Storage:
 P405: Store locked up.
 P403+ P235: Store in a well-ventilated place. Keep cool.
 P501: Dispose of contents/ container in accordance with local/ national/ international regulations.

3. Composition/ information on ingredients

3.1 Mixtures

Chemical characterization

A mixture of polymer resins and diazo compounds in a halogen free organic solvent.

Hazardous components

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and 3-Diazo-3, 4-dihydro-6-methoxy-4-oxonaphthalene-1-sulfonylchloride:

- EC-Nr.: 421-520-8
- Classification(67/548/EEC): F ; R11, R53
- GHS Classification (REGULATION: (EC)No 1272/2008): Flam. Sol.1; H228
Self-react. D; H242
Aquatic Chronic 4 ; H413
- Concentration [%]: > = 2,5 - < = 100

WEL substances:

2-Methoxy-1-methyl ethyl acetate

- CAS- Nr.: 108-65-6
- EC-Nr.: 203-603-9
- Classification(67/548/EEC): R10
- GHS Classification (REGULATION: (EC)No 1272/2008): Flam. Liq.3; H226
- Concentration [%]: > 50

Ethylactat

- CAS- Nr.: 97-64-3
- EC-Nr.: 202- 598-0
- Classification(67/548/EEC): R10, R37, R41
- GHS Classification (REGULATION: (EC)No 1272/2008): Flam. Liq.3; H226, H335, H318
- Concentration [%]: < 5

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H- Statements mentioned in this Section, see Section 16.

4. First aid measures

4.1 Description of first aid measures

General information:

- Remove soiled or soaked clothing immediately.
- If someone exposed to the product feels unwell, contact a doctor and show this safety data sheet.
- In case of medical condition, contact a physician and submit safety data sheet.

- Adhere to personal protective measures when giving first aid.

Inhalation:

- Remove the casualty into fresh air and keep him calm.
- Call in a physician immediately and show him the safety data sheet.

Skin contact:

- In case of contact with skin wash off immediately with polyethylene glycol 400, then with plenty of water.
- If polyethylene glycol is not available, rinse off with plenty of water.

Eye contact:

- Rinse the affected eye with plenty of water, at the same time keep the unaffected eye well protected.
- Rinse immediately with gently running water for 15 Minutes, maintaining eyelids open. Consult at once an ophthalmologist or a physician.

Ingestion:

- Do not induce vomiting.
- Call in a physician immediately and show him the safety data sheet.
- Let plenty of water be drunk in small gulps

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:

- Treat symptomatically.

5. Fire-fighting measures

5.1 Suitable extinguishing media:

- alcohol-resistant foam
- dry powder
- carbon dioxide
- water spray jet

5.2 Specific hazards during fire-fighting:

- In case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO), Nitrous gases (NO_x), Sulphur dioxide (SO₂)

5.3 Special protective equipment for fire-fighting:

- Use self-contained breathing apparatus
- Well closed full protective clothing (coat and pants) including helmet.

Further information:

- Fire residues and contaminated fire fighting water must be disposed of in accordance with the local regulations.

6. Accidental release measures

6.1 Personal precautions:

- See: Exposure controls and personal protection, chapter 8.

6.2 Environmental precautions:

- Do not allow entry to drains, water courses or soil.

6.3 Methods for cleaning up:

- Pick up with liquid binding materials (e.g. sand, kieselguhr, universal binder) and if necessary fill in containers capable of being locked.
- Dispose of absorbed material in accordance with the regulations.
- Containers in which spilt substance has been collected must be adequately labelled
- Clean contaminated floors and objects thoroughly, observing environmental regulations.
- Ensure adequate ventilation.

6.4 Additional advice:

- Information regarding Safe handling, see chapter 7.

- Information regarding personal protective measures, see chapter 8
- Information regarding Waste Disposal, see chapter 13.

7. Handling and Storage

7.1 Precautions for safe handling

Advice on safe handling:

- Provide good ventilation of working area (local exhaust ventilation if necessary).
- Wear gloves and safety glasses.

Advice on protection against fire and explosion:

- Keep away from sources of ignition
- Keep ignition sources away- do not smoke.
- Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for the storage areas and containers:

- Keep only in the original container

Further information on storage conditions:

- Keep container tightly closed and dry in a cool, well- ventilated place
- Protect from light.

Advice on common storage:

- Do not store or transport together with foodstuffs

Storage temperature:

- Optimum storage Temperature 5 - 15 °C

8. Exposure controls/personal protection

8.1 Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
2-Methoxy-1-Methylethylacetat	108-65-6	TWA	50ppm 275 mg/m3	2006-06-16	200/39/EC
Further information:		Skin: Identifies the possibility of significant uptake through the skin Indicative.			
		STEL	100ppm 550 mg/m3	2006-06-16	200/39/EC
Further information:		Skin: Identifies the possibility of significant uptake through the skin Indicative.			

DNEL

- 2-Methoxy-1-Methylethylacetate :
- End Use: Workers
 - Exposure routes: Skin Contact
 - Potential health effects: Chronic effects
 - Value: 54,8 mg/kg

 - End Use: Workers
 - Exposure routes: Inhalation
 - Potential health effects: Chronic effects
 - Value: 33 mg/m3

 - End Use: Workers
 - Exposure routes: Ingestion
 - Potential health effects: Chronic effects
 - Value: 1,67 mg/kg

 - End Use: Workers

Exposure routes: Skin contact
Potential health effects: Chronic effects
Value: 153,5 mg/kg

End Use: Workers
Exposure routes: Inhalation
Potential health effects: Chronic effects
Value: 275 mg/kg

PNEC

2-Methoxy-1-Methylethylacetate : Fresh Water
Value: 0,635 mg/l

Marine Water
Value: 0,0635 mg/l

Fresh Water sediment
Value: 3,29 mg/kg

Marine sediment
Value: 0,329 mg/kg

Soil
Value: 0,29 mg/kg

8.2 Exposure controls

Engineering measures

- See chapter 7; no measures exceeding the ones mentioned are necessary.

Personal protective equipment

Respiratory protection:

- Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure.

Hand protection:

- Break through time: >10 min
- Glove thickness: > 0,4 mm
- For short-term exposure (splash protection):
- Nitrile rubber gloves.
- Remarks: These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also particular working conditions under which the gloves are being used.

Eye protection:

- tightly fitting safety glasses

Body protection:

- protective clothing

Hygiene measures:

- At work do not eat, drink, smoke or take drugs.
- Keep away from foodstuffs and beverages.
- Wash hands before breaks and after work.
- Use barrier skin cream.

Protective measures:

- Do not inhale vapours
- Avoid contact with eyes and skin.
- Observe the usual precautions for handling chemicals.

Environmental exposure controls

General advice:

- Do not flush into surface water or sanitary sewer system.
- Avoid subsoil penetration.

9. Physical and chemical properties

Appearance

Form: liquid

Colour: red to dark

Odour: ester-like

Safety data

Flash point: > 42 °C

Ignition temperature: not determined

Thermal decomposition: not determined

Lower explosion limit: not determined

Upper explosion limit: not determined

Flammability (solid, gas): not determined

Oxidizing properties: not determined

Autoignition temperature: not determined

Burning number: not determined

PH-Value: Note: not reasonable

Freezing point: not determined

Starts to Boil: 145 °C

Sublimation point: not determined

Vapour Pressure: approx. 5 hPa at 20°C

Density: approx. 0.96 – 1.04 g / cm³ at 20°C

Water solubility: Note: The Solvent is partially soluble but the product forms two layers.

Partition coefficient:

n -octanol /water: not determined

Solubility in other solvents: not determined

Viscosity, dynamic: 95 – 130 mPa·s

Viscosity, kinematic: not determined

Relative vapour density: not determined

Evaporation rate: not determined

10. Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions: Incompatible with oxidizing materials

10.4 Conditions to avoid

Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents
Strong acids
Bases

10.6 Hazardous decomposition products

Hazardous decomposition products: No decomposition if stored and applied as directed.

11. Toxicological information

11.1 Information on toxicological effects

Product:

Acute oral toxicity:
No data available.

Acute inhalation toxicity:
No data available.

Acute dermal toxicity:
No data available.

Skin corrosion/ irritation:
No data available.

Serious eye damage/ eye irritation:
No data available.

Respiratory or skin sensitization:
No data available.

Components

Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane mixture of esters with 6- Diazo-5, 6-dihydro-5-1-sulfonylchloride and:

Acute oral toxicity:
Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane, mixture of esters with 6- Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : LD50: > 2.000 mg/kg
Species: rat
Method: OECD Test Guideline 401

Acute dermal toxicity:
Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane, mixture of esters with 6- Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : LD50: > 2.000 mg/kg
Species: rat
Method: Directive 67/548/EEC, Annex V B3

Skin irritation:
Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane, Species: rabbit

mixture of esters with 6- Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and	:	Result: No skin irritation Method: OECD Test Guideline 404
Eye irritation:		
Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane, mixture of esters with 6- Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and	:	Species: rabbit Result: No eye irritation Method: OECD Test Guideline 405
Sensitisation:		
Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane, mixture of esters with 6- Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and	:	Maximisation Test Species: guinea pig Result: Did not cause sensitization on laboratory animals. Method: OECD Test Guideline 406
Germ cell mutagenicity		
Genotoxicity in vitro:		
		Ames test, with or without metabolic Activation Result: positive
		Chromosome aberration test in vitro Species: hamster Result: negative
		In vitro assay Species: hamster, with or without metabolic activation Result: negative
Genotoxicity in vivo:		
		In vivo micronucleus test Species: mouse Bone marrow Result: negative
STOT- repeated exposure:		
		Species: rat NOAEL: 1.000 mg/kg

2-methoxy-1-methylethyl acetate:

Acute oral toxicity: LD50: > 8.532 mg/kg, rat (female)
Acute inhalation toxicity: LC50:> 10,8 mg/l, 6h, rat
Acute dermal toxicity: LD50: > 5.000 mg/kg, rabbit

Further information:

No toxicological testing was carried out on the preparation.
 The product was classified on the basis of the calculation procedure of the Dangerous Preparations Directive (1999/45/EC)

12. Ecological information

12.1 Toxicity

Product:

Toxicity to fish:
 No data available.

Toxicity to daphnia and other aquatic invertebrates:
 No data available.

Toxicity to algae:
 No data available.

Toxicity to bacteria:

No data available.

Components:

Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane mixture of esters with 6- Diazo-5, 6-dihydro-5-1-sulfonylchloride and:

Toxicity to fish:

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : LC50: > 100 mg/l
Exposure time: 96 h
Species: Danio rerio (zebra fish)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : EC50: > 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Immobilization Method: OECD Test Guideline 202

Toxicity to algae:

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : EC50: > 100 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Growth inhibition Method: OECD Test Guideline 201

Toxicity to bacteria:

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : EC50: > 1.000 mg/l
Species: Bacteria
Respiration inhibition
Method: OECD 209

2-methoxy-1-methylethyl acetate:

Toxicity to fish: LC50: 100mg/l, 96h,
Oryzias latipes (Orange-red killifish)
Semi static test

Toxicity to daphnia and other aquatic invertebrates:

EC50: 373 mg/l, 48h
Daphnia magna (Water flea)

12.2 Persistence and degradability

Product:

Biodegradability: no data available.

Components:

Bis-(5-acetyl-2, 3, 4-trihydroxy-phenyl)-methane mixture of esters with 6- Diazo-5, 6-dihydro-5-1-sulfonylchloride and:

Biodegradability:

Bis-(5-acetyl-2,3,4-trihydroxy-phenyl)-methane, mixture of esters with 6-Diazo-5, 6-dihydro-5-oxonaphthalene-1-sulfonylchloride and : Result: Not readily biodegradable
< 20 %
Method: OECD 301 F
Exposure time: 28d

2-methoxy-1-methylethyl acetate

Biodegradability: 99%
Result: biodegradable.
Exposure time: 28 d

12.3 Bioaccumulative potential:

Components:

2-methoxy-1-methylethyl acetate

Bioaccumulation: Bioaccumulation in unlikely.

12.4 Mobility in soil:

Components:

2-methoxy-1-methylethyl acetate

Distribution among environmental compartments: Koc: 1,7, Highly mobile in soils

12.5 Results of PBT and vPvB assessment:

Components:

2-methoxy-1-methylethyl acetate

Assessment: The substance does not fulfill the PBT criteria., The substance does not fulfil the vPvB criteria.

12.6 Other adverse effects

Information:

No ecological testing was carried out on the preparation
The product was classified on the basis of the calculation procedure of the Dangerous Preparations Directive (1999/45/EC).

13. Disposal considerations

Product:

- Product should be taken to a suitable and authorized waste disposal site in accordance with relevant regulations and if necessary after consultation with the waste disposal operator and/or the competent Authorities.

Contaminated packaging:

- Packaging that cannot be cleaned should be disposed of as product waste.

14. Transport Information

ADR/ RID

- UN- Number: UN 1993
- Description of the goods: Flammable liquid, n.o.s. (2-Methoxy-1-methylethyl acetate)
- Class: 3
- Packing group: III
- Classification code: F1
- Risk No. : 30
- Labels: 3
- Environmentally hazardous: yes

IATA

- UN-Number: UN 1993
- Description of the goods: Flammable liquid, n.o.s. (2-Methoxy-1-methylethyl acetate)
- Class: 3
- Packing group: III
- Labels: 3
- Environmentally hazardous: no
- Packing instructions: PAX: 309 / 60 liter CAO 310 / 220 liter

IMDG

- UN- Number: UN 1993

- Description of the goods: Flammable liquid, n.o.s.
- Class: 3
- Packing group: III
- Labels: 3
- Remarks: Shipment permitted
- EmS Number 1: F-E
- EmS Number 2: S-E
- Marine pollutant: no

15. Regulatory Information

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

National regulation

Water hazard class:

1 slightly hazardous for water

Other regulation:

BG Data Sheet M 004 "Substances causing irritation / corrosive substances"

Observe the provisions of The Water Act for installations dealing with substances hazardous to water

16. Other Information

Full text of the R-phrases referred to under section 2 and 3

- R10 Flammable.
- R11 Highly flammable.
- R37 Irritating to respiratory system.
- R41 Risk of serious damage to eyes.
- R53 May cause long-term adverse effects in the aquatic environment.

Full text of H-statements referred to under section 2 and 3

- H226 Flammable liquid and vapour.
- H228 Flammable solid.
- H242 Heating may cause a fire.
- H413 May cause long lasting harmful effects to aquatic life.
- H318 Causes serious eye damage.
- H335 May cause respiratory irritation.

Decimal notation: "Thousands" places are identified with a dot (example: 2.000 mg/kg means "two thousand mg/kg"). Decimal places are identified with a comma (example: 1,35 g/cm³)

Further Information

Further Information:

Contains: < 0.5% 2-methoxypropylacetate, CAS no.: 70657-70-4. EC Classification : T, R 10-37-61

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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