



Safety Data Sheet according to (EC) No 1907/2006

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Masterbox A

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

Product identifier:

1 139 272 -- MAKROFLEX65 PU PRO 850 RUS

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

Intended use:

Foam, 1-component with propellant gas

Details of the supplier of the safety data sheet:

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SECTION 2: Hazards identification

Classification of the substance or mixture:

Classification (DPD):

F+ - Extremely flammable
R12 Extremely flammable.
Xn - Harmful
carcinogenic, category 3
R40 Limited evidence of a carcinogenic effect.
Xn - Harmful
R20/22 Harmful by inhalation and if swallowed.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Xi - Irritant
R36/37/38 Irritating to eyes, respiratory system and skin.
Sensitizing
R42/43 May cause sensitization by inhalation and skin contact.

Label elements (DPD):

F+ - Extremely flammable

Xn - Harmful



Risk phrases:

- R12 Extremely flammable.
- R20/22 Harmful by inhalation and if swallowed.
- R36/37/38 Irritating to eyes, respiratory system and skin.
- R40 Limited evidence of a carcinogenic effect.
- R42/43 May cause sensitization by inhalation and skin contact.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases:

- S2 Keep out of the reach of children.
- S23 Do not breathe vapour.
- S24/25 Avoid contact with skin and eyes.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S46 If swallowed, seek medical advice immediately and show this container or label.
- S51 Use only in well-ventilated areas.
- S56 Dispose of this material and its container to hazardous or special waste collection point.

Additional labeling:

Contains isocyanates. See information supplied by the manufacturer.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.
Keep out of the reach of children

Contains:

Diphenylmethane-diisocyanate, isomers and homologues,
Tris(2-chloro-1-methylethyl) phosphate

Other hazards:

Information according to XVII. 56 REACH
Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.
Solvents contained in the product evaporate during processing and their vapors can form explosive/highly flammable air/vapor mixtures.
Pregnant women should absolutely avoid inhalation and skin contact.

SECTION 3: Composition/information on ingredients

General chemical description:

Component PU foam in pressurized can

Base substances of preparation:

Polyurethane prepolymer

With free 4,4'-methylenediphenyl diisocyanate (MDI)

Propellant gas base: dimethyl ether / isobutane / propane / n-butane mixture

Hazardous components	EC Number	Content	Classification
Diphenylmethane-diisocyanate, isomers and homologues 9016-87-9		< 20 %	Specific target organ toxicity - single exposure H335 Skin irritation 2 H315 Respiratory sensitizer 1 H334 Acute toxicity 4; Inhalation H332 Specific target organ toxicity - repeated exposure 2 H373 Carcinogenicity 2 H351 Skin sensitizer 1 H317 Serious eye irritation 2 H319
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	237-158-7	< 20 %	Acute toxicity 4; Oral H302 Chronic hazards to the aquatic environment 3 H412
Isobutane 75-28-5	200-857-2	< 5 %	Flammable gases 1 H220 Gases under pressure
Propane 74-98-6	200-827-9	< 5 %	Flammable gases 1 H220 Gases under pressure
Dimethyl ether 115-10-6	204-065-8	< 10 %	Flammable gases 1 H220 Gases under pressure

Only dangerous ingredients for which a CLP classification is already available are displayed in this table.
For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

Hazardous components CAS-No.	EC Number REACH-Reg No.	Content	Classification
Diphenylmethane-diisocyanate, isomers and homologues 9016-87-9		< 20 %	Xi - Irritant; R36/37/38 carcinogenic, category 3; R40 Xn - Harmful; R20, R48/20 R42/43
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	237-158-7	< 20 %	Xn - Harmful; R22
Isobutane 75-28-5	200-857-2	< 5 %	F+ - Extremely flammable; R12
Propane 74-98-6	200-827-9	< 5 %	F+ - Extremely flammable; R12
Dimethyl ether 115-10-6	204-065-8	< 10 %	F+ - Extremely flammable; R12

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

Description of first aid measures:

General information:

In case of adverse health effects seek medical advice.

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Skin contact:

Fresh foam : Wipe off affected skin area immediately with a soft cloth and then remove residues with vegetable oil; apply skin care product. Cured foam can be removed only mechanically.

Eye contact:

Immediately flush eyes with water, put on a bandage with sterile gauze, see an oculist.

Ingestion:

Rinse mouth, do not induce vomiting, consult a doctor.

Most important symptoms and effects, both acute and delayed:

INGESTION: Nausea, vomiting, diarrhoea, abdominal pain.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

EYE: Irritation, conjunctivitis.

SKIN: Rash, Urticaria.

Limited evidence of a carcinogenic effect (carcinogenic category 3).

Danger of serious damage to health by prolonged exposure by inhalation.

Indication of any immediate medical attention and special treatment needed:

See section: Description of first aid measures

SECTION 5: Firefighting measures

Extinguishing media:

Suitable extinguishing media:

carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

Special hazards arising from the substance or mixture:

Cool pressurized can containers with jet of water. Containers may explode.

In the event of a fire, carbon monoxide (CO) and carbon dioxide (CO₂) can be released.

In the event of fire, isocyanate vapors may be formed.

Advice for firefighters:

Wear self-contained breathing apparatus.

Wear protective equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Avoid contact with skin and eyes.

Ensure adequate ventilation.

Wear protective equipment.

Environmental precautions:

Do not empty into drains / surface water / ground water.

Methods and material for containment and cleaning up:

Remove mechanically.

Dispose of contaminated material as waste according to Chapter 13.

Reference to other sections:

See advice in chapter 8

SECTION 7: Handling and storage

Precautions for safe handling:

Ventilate working rooms thoroughly. Avoid naked flames, sparking and sources of ignition. Switch off electrical devices. Do not smoke, do not weld. Do not empty waste into waste water drains.

Transport by automobile: leave the container wrapped in a cloth in the trunk, never in the passenger area.

Hygiene measures:

Do not breath vapours.

When using the product avoid alcohol consumption.

Do not eat, drink or smoke while working.
Wash hands before work breaks and after finishing work.

Conditions for safe storage, including any incompatibilities:

For pressurized can: protect from direct sunshine and temperatures above 50°C.
Store in a cool, dry place.
Ensure that storage and workrooms are adequately ventilated.
Avoid strictly temperatures below - 20 °C and above + 50 °C.
Do not store together with oxidants.
Do not store together with flammable solutions.
Do not store together with food or other consumables (coffee, tea, tobacco, etc.).

Specific end use(s):

Foam, 1-component with propellant gas

SECTION 8: Exposure controls/personal protection

Control parameters:

Valid for Germany
Germany - Occupational Exposure Limits

Ingredient	ppm	mg/m3	Type	Category	Remarks
4,4'-Methylenediphenyl diisocyanate 101-68-8		0,05	AGW:	=2= If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			STEL factor:	1 Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values. Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			Short Term Exposure Classification:		TRGS 900
Isobutane 75-28-5			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Isobutane 75-28-5	1.000	2.400	AGW:	4	TRGS 900
Propane 74-98-6	1.000	1.800	AGW:	4	TRGS 900
Propane 74-98-6			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
DIMETHYLETHER 115-10-6	1.000	1.920	Time Weighted Average (TWA):	Indicative	ECTLV
Dimethyl ether 115-10-6	1.000	1.900	AGW:	8	TRGS 900
Dimethyl ether 115-10-6			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900

Exposure controls:

Respiratory protection:

When processing large amounts.
Suitable breathing mask when there is inadequate ventilation.

Hand protection:

Use attached gloves. Perforation time < 5 minutes.

Eye protection:

Goggles which can be tightly sealed.

Skin protection:

Suitable protective clothing

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

Appearance	pressurized can liquid
Odor	beige ether-like
pH	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	< 20 °C (< 68 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density (23 °C (73,4 °F))	16-18 g/cm ³
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (23 °C (73,4 °F))	Solvent: Water) Reacts slowly with water to liberate carbon dioxide gas.
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits lower / upper	0,4 %(V) / 32 %(V)
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

Other information:

No data available / Not applicable

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

Reacts with water: Pressure built up in closed vessel (CO₂).
 Reacts with water: generation of heat.
 Reacts with amines, alcohols, acids and alkalis.
 Reaction with oxidants.

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reactions:

See section reactivity

Conditions to avoid:

Container may burst when heated to over 50°C. The contents may form explosive, combustible mixture. Avoid ignition sources and naked flames. Comply with warning on container label.

Incompatible materials:

None if used properly.

Hazardous decomposition products:

None known

SECTION 11: Toxicological information**General toxicological information:**

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Cross-reactions with other isocyanate compounds are possible.
Persons suffering from allergic reactions to isocyanates should avoid contact with the product.
Suspected to have carcinogenic effect.

Oral toxicity:

Harmful if swallowed.

Inhalative toxicity:

Harmful by inhalation.
In the event of protracted or repeated exposure, damage to health cannot be excluded.

Skin irritation:

Primary skin irritation: irritating

Eye irritation:

Primary eye irritation: irritating

Sensitizing:

May cause sensitization by inhalation.
May cause sensitization by skin contact.

Acute toxicity:

Hazardous components	Value type	Value	Route of application	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LD50	1.150 mg/kg	oral	4 h	rat	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 403 (Acute Inhalation Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
	LD50	1.750 mg/kg	oral		rat	
	LC50	> 7,19 mg/l	inhalation		rat	
	LD50	> 2.000 mg/kg	dermal		rat	

Skin corrosion/irritation:

Hazardous components	Result	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	slightly irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components	Result	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	slightly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components	Result	Test type	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	not sensitising	Guinea pig maximisation test	guinea pig	

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation /	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	negative	bacterial gene mutation assay	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Dimethyl ether 115-10-6	negative	bacterial reverse mutation assay (e.g. Ames test)	with and without		

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	NOAEL=800 - 7500 ppm	oral: feed	90 days ad libitum	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Dimethyl ether 115-10-6	NOAEL=> 10000 ppm	inhalation	4 week 6 hours/day, 5 days/week	rat	

SECTION 12: Ecological information**General ecological information:**

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.
Do not empty into drains, soil or bodies of water.

Ecotoxicity:

May cause long-term adverse effects in the aquatic environment.

Ecotoxicity

Acute invertebrate toxicity: EC50 > 100 mg product/l.

Aquatic plant/algae toxicity:

EC50 > 100 mg product/l.
Alga, Growth Inhibition test OECD 201.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LC50	56,2 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	EC50	131 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	EC50	73 mg/l	Algae Fish	96 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Dimethyl ether 115-10-6	LC50	> 4.000 mg/l	Daphnia	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Dimethyl ether 115-10-6	EC50	> 4.000 mg/l		48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Dimethyl ether 115-10-6	EC50	> 1.000 mg/l	Algae			OECD Guideline 201 (Alga, Growth Inhibition Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5		aerobic	14 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)

Hazardous components CAS-No.	Result	Route of applicatio	Degradability	Method
Dimethyl ether 115-10-6	under test conditions no biodegradation observed	aerobic	5 %	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	3,33				20 °C	EU Method A.8 (Partition Coeffici ent)
Isobutane 75-28-5	2,88				20 °C	OECD Guideline 107 (Partition Coefficient (n- octanol / water), Shake Flask Method)
Dimethyl ether 115-10-6	0,1					

SECTION 13: Disposal considerations**Waste treatment methods:****Product disposal:**

Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:

Completely empty pressurized gas containers (including propellant gas).
Only empty containers are to be disposed of as recoverable materials.

Waste code

160504 gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport information**Road transport ADR:**

Class: 2
Packaging group:
Classification code: 5F
Hazard ident. number:
UN no.: 1950
Label: 2.1
Technical name: AEROSOLS
Tunnelcode: (D)

Railroad transport RID:

Class: 2
Packaging group:
Classification code: 5F

Hazard ident. number:	23
UN no.:	1950
Label:	2.1
Technical name:	AEROSOLS
Tunnelcode:	

Inland water transport ADN:

Class:	2
Packaging group:	
Classification code:	5F
Hazard ident. number:	
UN no.:	1950
Label:	2.1
Technical name:	AEROSOLS

Marine transport IMDG:

Class:	2.1
Packaging group:	
UN no.:	1950
Label:	2.1
EmS:	F-D ,S-U
Seawater pollutant:	-
Proper shipping name:	AEROSOLS

Air transport IATA:

Class:	2.1
Packaging group:	
Packaging instructions (passenger)	203
Packaging instructions (cargo)	203
UN no.:	1950
Label:	2.1
Proper shipping name:	Aerosols, flammable

SECTION 15: Regulatory information

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

VOC content (VOCV 814.018 VOC regulation CH) 16,10 %

National regulations/information (Germany):

WGK: 1, slightly water-endangering product. (German VwVwS of May 17, 1999) Classification in conformity with the calculation method

BG regulations, rules, infos:

BG data sheet: BGI 524 Hazardous substances: polyurethane production and processing / isocyanates (M 044)

BG regulation: BGV B 1 Handling hazardous substances

Storage class VCI: 2B

General remarks (DE): This product is in scope of the German regulation "ChemikalienVerbotsVerordnung"

SECTION 16: Other information

The labelling of the product is indicated in Section 2.

The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

R12 Extremely flammable.

R20 Harmful by inhalation.

R22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

R40 Limited evidence of a carcinogenic effect.

R42/43 May cause sensitization by inhalation and skin contact.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

H220 Extremely flammable gas.

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.