

according to Regulation (EC) No 1907/2006

354 Electric 073540250AB

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

1.1. Product identifier

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

1.3. Details of the supplier of the safety data sheet

Company name: TUNAP GmbH & Co. KG
Street: Bürgermeister-Seidl-Str. 2
Place: D-82515 Wolfratshausen

Telephone: +49 (0) 8171/1600 - 0 Telefax: +49 (0) 8171/1600 - 40

e-mail: sdb@tunap.com Internet: www.tunap.com

1.4. Emergency telephone +49 (0) 30 30 686 790 (Giftnotruf Berlin)

number:

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories: Aerosol: Aerosol 1

Aspiration hazard: Asp. Tox. 1

Respiratory or skin sensitisation: Skin Sens. 1A

Specific target organ toxicity - repeated exposure: STOT RE 1 Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Extremely flammable aerosol.

Pressurised container: May burst if heated. May be fatal if swallowed and enters airways.

May cause an allergic skin reaction.

Causes damage to organs through prolonged or repeated exposure.

Harmful to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %)

Dihydro-3-(tetrapropenyl)furan-2,5-dione

Signal word: Danger

Pictograms:







Hazard statements

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.
H317 May cause an allergic skin reaction.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No



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smoking.

P211 Do not spray on an open flame or other ignition source.

P260 Do not breathe Aerosol. P280 Wear protective gloves.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P251 Do not pierce or burn, even after use.

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop. The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	GHS Classification	•	•	
64742-82-1	Hydrocarbons, C10-C13, n-alkane	s, iso-alkanes, cyclics, aromates (2-	-25 %)	25 - < 50 %
	919-164-8		01-2119473977-17	
	STOT RE 1, Asp. Tox. 1, Aquatic 0	Chronic 3; H372 H304 H412 EUH06	66	
64742-53-6	Baseoil - unspecified, Distillates (p	etroleum), hydrotreated light naphth	nenic	25 - < 50 %
	265-156-6		01-2119480375-34	
	Asp. Tox. 1; H304		•	
75-28-5	isobutane		25 - < 50 %	
	200-857-2	601-004-00-0	01-2119485395-27	
	Flam. Gas 1, Liquefied gas; H220	•		
74-98-6	propane		3 - < 5 %	
	200-827-9	601-003-00-5	01-2119486944-21	
	Flam. Gas 1, Liquefied gas; H220	H280		
106-97-8	butane		1 - < 3 %	
	203-448-7	601-004-00-0	01-2119474691-32	
	Flam. Gas 1, Liquefied gas; H220			
26544-38-7	Dihydro-3-(tetrapropenyl)furan-2,5		0.1 - < 1 %	
	247-781-6			
	Eye Irrit. 2, Skin Sens. 1A, Aquatio			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation

Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms



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persist, seek medical advice.

After contact with skin

Wash with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Headache, nausea, dizziness, fatigue, skin irritation

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

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Extinguishing powder.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information

Danger of bursting container.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling



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Advice on safe handling

Observe instructions for use.

Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

When using do not eat, drink, smoke, sniff.

Wear personal protection equipment (refer to section 8).

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Heating causes rise in pressure with risk of bursting.

Further information on handling

Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Observe legal regulations and provisions.

Hints on joint storage

Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions

Protect from frost. Protect against direct sunlight. Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
106-97-8	Butane	600	1450		TWA (8 h)	WEL
		750	1810		STEL (15 min)	WEL

Additional advice on limit values

a no restriction

b End of exposure or end of shift

c at long term exposure: after several previous shifts

d before next shift

blood (B)

Urine (U)

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures

Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.

DIN EN 166



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Hand protection

Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material: NBR (Nitrile rubber) Breakthrough time (maximum wearing time) 480min Thickness of the glove material 0,45 mm

DIN EN 374

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Observe legal regulations and provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Aerosol Colour: light yellow

Test method

pH-Value (at 20 °C): not determined DIN 19268

Changes in the physical state

Melting point:not determinedInitial boiling point and boiling range:-40 °CSublimation point:not applicableSoftening point:not applicablePour point:not applicableFlash point:-80 °C

Flammability

Solid: not applicable
Gas: not applicable
Lower explosion limits: 0,6
Upper explosion limits: 15
Ignition temperature: >200 °C

Auto-ignition temperature

Solid: not applicable
Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidising.

Vapour pressure: not determined

Density (at 20 °C): 0,855 g/cm³ DIN 51757

Water solubility: The study does not need to be conducted because the substance is known to be

cause the substance is known to be insoluble in water.



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Solubility in other solvents

not determined

Partition coefficient: not determined

Vapour density: not determined

Evaporation rate: not determined

9.2. Other information

Solid content: not determined

Data apply to technical substance: Relative density, Colour, Odour, Viscosity, pH.

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Do not expose to temperatures above 50 °C. Heating causes rise in pressure with risk of bursting.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Take precautionary measures against static discharges.

10.5. Incompatible materials

Oxidizing agents. Pyrophoric or self-heating substances.

10.6. Hazardous decomposition products

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO2, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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



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CAS No	Chemical name						
	Exposure route	Dose		Species	Source		
64742-82-1	Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %)						
	oral	LD50 mg/kg	> 15000	Rat	Study report (1977)		
	dermal	LD50	>3400 mg/kg	Rabbit			
	inhalation (4 h) vapour	LC50	> 13,1 mg/l	Rat	Study report (1977)		
	inhalation (4 h) aerosol	LC50	13,1 mg/l	Rat			
64742-53-6	Baseoil - unspecified, Distillates (petroleum), hydrotreated light naphthenic						
	oral	LD50	>5000 mg/kg	Rat			
	dermal	LD50	>3000 mg/kg	Rabbit			
75-28-5	isobutane						
	inhalation vapour	LC50	1237 mg/l	Mouse.			
106-97-8	butane						
	inhalation (4 h) gas	LC50	658 ppm	Rat	GESTIS		
26544-38-7	Dihydro-3-(tetrapropenyl)furan-2,5-dione						
	oral	LD50	2900 mg/kg	Rat			
	dermal	LD50 mg/kg	6250-7500	Rat			
	inhalation (4 h) vapour	LC50	1220 mg/l	Rat			
	inhalation (4 h) aerosol	LC50	5,3 mg/l	Rat			

Irritation and corrosivity

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

Sensitising effects

May cause an allergic skin reaction. (Dihydro-3-(tetrapropenyl)furan-2,5-dione)

Carcinogenic/mutagenic/toxic effects for reproduction

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

No indication of human carcinogenicity.

No indications of human germ cell mutagenicity exist.

No indications of human reproductive toxicity exist.

STOT-single exposure

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

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking. Causes damage to organs through prolonged or repeated exposure. (Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %))

Aspiration hazard

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

Specific effects in experiment on an animal

No information available.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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CAS No	Chemical name								
	Aquatic toxicity	Dose		[h] [d]	Species	Source			
64742-82-1	Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %)								
	Acute algae toxicity	ErC50	4,1 mg/l	72 h	Pseudokirchneriella subcapitata	REACh Registration Dossier			
	Acute crustacea toxicity	EC50	10 - 22 mg/l	48 h	Daphnia magna	REACh Registration Dossier			
	Fish toxicity	NOEC	0,13 mg/l	28 d	Oncorhynchus mykiss	REACh Registration Dossier			
	Crustacea toxicity	NOEC	0,28 mg/l	21 d	Daphnia magna	REACh Registration Dossier			
75-28-5	isobutane								
	Acute fish toxicity	LC50	91,42 mg/l	96 h	Fish, no other information	United States Environmental Protection A			
	Acute algae toxicity	ErC50	19,37 mg/l	96 h	Algae	USEPA OPPT Risk Assessment Division (200			
	Acute crustacea toxicity	EC50	69,43 mg/l	48 h	Daphnia sp.	USEPA OPPT Risk Assessment Division (200			
74-98-6	propane								
	Acute fish toxicity	LC50	49,9 mg/l	96 h	Fish, no other information	United States Environmental Protection A			
	Acute algae toxicity	ErC50	19,37 mg/l	96 h	Algae	USEPA OPPT Risk Assessment Division (200			
	Acute crustacea toxicity	EC50	69,43 mg/l	48 h	Daphnia sp.	USEPA OPPT Risk Assessment Division (200			
106-97-8	butane	•				·			
	Acute fish toxicity	LC50	49,9 mg/l	96 h	Fish, no other information	United States Environmental Protection A			
	Acute algae toxicity	ErC50	19,37 mg/l	96 h	Algae	USEPA OPPT Risk Assessment Division (200			
	Acute crustacea toxicity	EC50	69,43 mg/l	48 h	Daphnia sp.	USEPA OPPT Risk Assessment Division (200			
26544-38-7	Dihydro-3-(tetrapropenyl)furan-2,5-dione								
	Acute fish toxicity	LC50	> 100 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)				
	Acute algae toxicity	ErC50	110 mg/l	96 h	Selenastrum capricornutum				

12.2. Persistence and degradability

The product has not been tested.



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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64742-82-1	Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %)			
	OECD Guideline 301 F	77,05%	28	
	Easily biodegradable (concerning to the criteria of the OECD)			

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64742-82-1	Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %)	4,2
75-28-5	isobutane	1,09
74-98-6	propane	1,09
106-97-8	butane	1,09
26544-38-7	Dihydro-3-(tetrapropenyl)furan-2,5-dione	>=4,39

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and

discarded chemicals; gases in pressure containers (including halons) containing hazardous

substances; hazardous waste

Waste disposal number of used product

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and

discarded chemicals; gases in pressure containers (including halons) containing hazardous

substances; hazardous waste

Waste disposal number of contaminated packaging

150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND

PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately

collected municipal packaging waste); metallic packaging

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)



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Flantis 07054005045

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14.1. UN number:UN 195014.2. UN proper shipping name:AEROSOLS

14.3. Transport hazard class(es):214.4. Packing group:-Hazard label:2.1Classification code:5F

Special Provisions: 190 327 344 625

Limited quantity: 1 L
Excepted quantity: E0
Transport category: 2
Tunnel restriction code: D

Inland waterways transport (ADN)

14.1. UN number: UN 1950 **14.2. UN proper shipping name:** AEROSOLS

14.3. Transport hazard class(es):214.4. Packing group:-Hazard label:2.1Classification code:5F

Special Provisions: 190 327 344 625

Limited quantity: 1 L
Excepted quantity: E0

Marine transport (IMDG)

14.1. UN number: UN 1950 **14.2. UN proper shipping name:** AEROSOLS

14.3. Transport hazard class(es):2.114.4. Packing group:-Hazard label:2.1Marine pollutant:no

Special Provisions: 63, 190, 277, 327, 344, 381,959

Limited quantity: 1000 mL Excepted quantity: E0 EmS: F-D, S-U

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1950

14.2. UN proper shipping name: AEROSOLS, flammable

14.3. Transport hazard class(es):2.114.4. Packing group:-Hazard label:2.1

Special Provisions: A145 A167 A802

Limited quantity Passenger: 30 kg G Passenger LQ: Y203 Excepted quantity: E0

IATA-packing instructions - Passenger:203IATA-max. quantity - Passenger:75 kgIATA-packing instructions - Cargo:203IATA-max. quantity - Cargo:150 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no



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14.6. Special precautions for user

Warning: Flammable gases.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

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 28: Hydrocarbons, C10-C13, n-alkanes, iso-alkanes, cyclics, aromates (2-25 %); Baseoil - unspecified,

Distillates (petroleum), hydrotreated light naphthenic; isobutane; butane

2010/75/EU (VOC):

2004/42/EC (VOC):

Information according to 2012/18/EU

No information available.

No information available.

P3a FLAMMABLE AEROSOLS

(SEVESO III):

Additional information

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

Aerosol directive (75/324/EEC)

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile

work protection guideline' (94/33/EC).

Water contaminating class (D): 2 - clearly water contaminating

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: May hurst

H229 Pressurised container: May burst if heated.

H280 Contains gas under pressure; may explode if heated.

H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H372 Causes damage to organs (Central nervous system) through prolonged or repeated

exposure if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.
 EUH066 Repeated exposure may cause skin dryness or cracking.



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Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singulary responsible for adhering to existing laws and regulations.

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