Safety Data Sheet

according to Regulation (EC) No 1907/2006

TUNAIR PAO 46

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

1.1. Product identifier

TUNAIR PAO 46

UFI: KQS3-302A-300X-R4T8

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 number:

1774 / +356 2559 4600

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Pictograms:

Hazard statements

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P391 Collect spillage.

2.3. Other hazards

The mixture contains the following substances fulfilling the PBT criteria according to REACH, annex XIII:
O,O,O-triphenyl phosphorothioate.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene			0.1 - < 1 %
	270-128-1		01-2119491299-23	
	Repr. 2, Aquatic Chronic 3; H361f H412			
597-82-0	O,O,O-triphenyl phosphorothioate			0.1 - < 1 %
	209-909-9		01-2119979545-21	
	Aquatic Chronic 1; H410			

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		
68411-46-1	270-128-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene	0.1 - < 1 %
	inhalation: LC50 = >5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 5000 mg/kg		
597-82-0	209-909-9	O,O,O-triphenyl phosphorothioate	0.1 - < 1 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 10000 mg/kg Aquatic Chronic 1; H410: M=10		

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.

After contact with skin

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

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

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

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

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

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.

For non-emergency personnel

First aider: Pay attention to self-protection!

For emergency responders

Fight fire with normal precautions from a reasonable distance.

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).

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

Clean contaminated articles and floor according to the environmental legislation.

Other information

Absorb with liquid-binding material (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

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).

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Advice on general occupational hygiene

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

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.

Hints on joint storage

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

Further information on storage conditions

Store in a cool dry place.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Name of agent			
DNEL type		Exposure route	Effect	Value
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene			
Worker DNEL, long-term		inhalation	systemic	0,6 mg/m³
Worker DNEL, long-term		dermal	systemic	0,08 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,14 mg/m³
Consumer DNEL, long-term		dermal	systemic	0,04 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,04 mg/kg bw/day
597-82-0	O,O,O-triphenyl phosphorothioate			
Worker DNEL, long-term		inhalation	systemic	1,39 mg/m³
Worker DNEL, long-term		dermal	systemic	0,4 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,34 mg/m³
Consumer DNEL, long-term		dermal	systemic	0,2 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,2 mg/kg bw/day

PNEC values

CAS No	Name of agent	
Environmental compartment		Value
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene	
Freshwater		0,034 mg/l
Freshwater (intermittent releases)		0,51 mg/l
Marine water		0,003 mg/l
Freshwater sediment		0,446 mg/kg
Marine sediment		0,045 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		1,76 mg/kg
597-82-0	O,O,O-triphenyl phosphorothioate	
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		2,46 mg/kg

Additional advice on limit values

a no restriction
b End of exposure or end of shift
c at long-term exposure:
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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection:

EN 166

Hand protection

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: 480min
Thickness of the glove material 0,45 mm
EN ISO 374

Skin protection

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

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Filtering device with filter or ventilator filtering device of type: A
Observe the wear time limits as specified by the manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Aerosol	
Colour:	colourless	
		Test method
Boiling point or initial boiling point and boiling range:	> 200 °C	
Flash point:	> 200 °C	ISO 3679
pH-Value (at 20 °C):		DIN 19268
Viscosity / kinematic: (at 40 °C)	> 20 mm²/s	DIN EN ISO 3104
Density (at 20 °C):		DIN 51757

9.2. Other information

Other safety characteristics

Viscosity / dynamic:	DIN 53019-1

SECTION 10: Stability and reactivity

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Take precautionary measures against static discharges.

10.5. Incompatible materials

Pyrophoric or self-heating substances.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene				
	oral	LD50 > 5000 mg/kg	Rat	Study report (1982)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1988)	OECD Guideline 402
	inhalation (4 h) dust/mist	LC50 >5 mg/l	Rat		
597-82-0	O,O,O-triphenyl phosphorothioate				
	oral	LD50 > 10000 mg/kg	Rat	Study report (1976)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1997)	OECD Guideline 402

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
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

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

Aspiration hazard

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

Information on likely routes of exposure

, Inhalation, Skin contact, Eye contact.
Reference to other sections: 2.1, 4.2.

Specific effects in experiment on an animal

No information available.

Additional information on tests

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

11.2. Information on other hazards

Endocrine disrupting properties

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

Other information

No information available.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene						
	Acute fish toxicity	LC50	> 100 mg/l	96 h	Danio rerio	Study report (1988)	OECD Guideline 203
	Acute algae toxicity	ErC50	> 100 mg/l	72 h	Desmodesmus subspicatus	Study report (2006)	OECD Guideline 201
	Acute crustacea toxicity	EC50	51 mg/l	48 h		Study report (2004)	OECD Guideline 202
597-82-0	O,O,O-triphenyl phosphorothioate						
	Acute fish toxicity	LL50	> 100 mg/l	96 h	Danio rerio	REACh Registration Dossier	OECD Guideline 203
	Acute algae toxicity	ErC50	> 100 mg/l	72 h	Desmodesmus subspicatus	REACh Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h		REACh Registration Dossier	OECD Guideline 202
	Crustacea toxicity	NOEC	> 5,5 mg/l	22 d		REACh Registration Dossier	OECD Guideline 211

12.2. Persistence and degradability

There are no data available on the mixture itself. 0

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene	> 6
597-82-0	O,O,O-triphenyl phosphorothioate	5

BCF

CAS No	Chemical name	BCF	Species	Source
68411-46-1	Benzenamine, N-phenyl-,reaction products with 2,4,4-trimethylpentene	411	Cyprinus carpio	Study report (2000)
597-82-0	O,O,O-triphenyl phosphorothioate	2239	fish	REACh Registration D

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The mixture contains the following substances fulfilling the PBT criteria according to REACH, annex XIII: O,O,O-triphenyl phosphorothioate.

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

No information available.

Further information

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

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

List of Wastes Code - residues/unused products

130208 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; other engine, gear and lubricating oils; hazardous waste

List of Wastes Code - used product

130208 OIL WASTES AND WASTES OF LIQUID FUELS (EXCEPT EDIBLE OILS, AND THOSE IN CHAPTERS 05, 12 AND 19); waste engine, gear and lubricating oils; other engine, gear and lubricating oils; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3082
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Classification code:	M6
Special Provisions:	274 335 375 601
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	-

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3082
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Classification code:	M6
Special Provisions:	274 335 375 601
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3082
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)

14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Marine pollutant:	yes
Special Provisions:	274 335 969
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-F

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3082
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Special Provisions:	A97 A158 A197 A215
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y964
Excepted quantity:	E1
IATA-packing instructions - Passenger:	964
IATA-max. quantity - Passenger:	450 L
IATA-packing instructions - Cargo:	964
IATA-max. quantity - Cargo:	450 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	O,O,O-triphenyl phosphorothioate

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 75

Directive 2010/75/EU on industrial emissions:	No information available.
Directive 2004/42/EC on VOC in paints and varnishes:	No information available.

Additional information

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

National regulatory information

Water hazard class (D):	1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,4,5,6,7,9,10,11,12,13,14,15,16.

Abbreviations and acronyms

Repr: Reproductive toxicity
Aquatic Chronic: Chronic aquatic hazard
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA: International Air Transport Association
IMDG: International Maritime Code for Dangerous Goods
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 (division of the American Chemical Society)
DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level
WEL: Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
ATEL (EC): Short Term Exposure Limit
LC50: Lethal Concentration
EC50:half maximal Effective Concentration
ErC50: means EC50 in terms of reduction of growth rate

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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