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

1.1. Product identifier

173 System Agent Concentrate MP17300200A

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

Use of the substance/mixture

Additive

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)	
<u>number:</u>		

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories: Flammable liquid: Flam. Liq. 2 Skin corrosion/irritation: Skin Irrit. 2 Serious eye damage/eye irritation: Eye Dam. 1 Specific target organ toxicity - single exposure: STOT SE 3 Specific target organ toxicity - single exposure: STOT SE 3 Aspiration hazard: Asp. Tox. 1 Hazard Statements: Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates 2-methylpropan-1-ol; iso-butanol 2-Propanol

Signal word:

Pictograms:

Danger

Hazard statements

H225	
H304	
H315	

Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation.

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H318	Causes serious eye damage.	
H335	May cause respiratory irritation.	
H336	May cause drowsiness or dizziness.	
Precautionary statemen	its	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.	
P260	Do not breathe vapours.	
P280	Wear eye/face protection.	
P271	Use only outdoors or in a well-ventilated area.	
P302+P352	IF ON SKIN: Wash with plenty of Water and soap	
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P337+P313	If eye irritation persists: Get medical advice/attention.	
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.	
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
P314	Get medical advice/attention if you feel unwell.	
2.3. Other hazards		

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	Classification according to	Regulation (EC) No. 1272/2008 [0		
64742-48-9	Hydrocarbons, C9 - C11, n	-alkanes, iso-alkanes, cyclics, < 2	% aromates	25 - < 50 %
	919-857-5		01-2119463258-33	
	Flam. Liq. 3, STOT SE 3, A	Asp. Tox. 1; H226 H336 H304 EUH	1066	
78-83-1	2-methylpropan-1-ol; iso-b	utanol		25 - < 50 %
	201-148-0	603-108-00-1		
	Flam. Liq. 3, STOT SE 3, S	Skin Irrit. 2, Eye Dam. 1, STOT SE	3; H226 H335 H315 H318 H336	
67-63-0	2-Propanol	20 - < 25 %		
	200-661-7	200-661-7 603-117-00-0 01-2119457558-25		
	Flam. Liq. 2, Eye Irrit. 2, S			
1634-04-4	tert-butyl methyl ether; MT	5 - < 10 %		
	216-653-1	603-181-00-X		
	Flam. Liq. 2, Skin Irrit. 2; H			
337367-30-3	1-Propene, 2-methyl-, hom)	opolymer, hydroformylation produ	cts, reaction products with ammonia	1 - < 3 %
	Skin Irrit. 2, Aquatic Chron	ic 3; H315 H412		
173140-85-7	polyether			1 - < 3 %
	Skin Irrit. 2; H315			

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

SECTION 4: First aid measures

according to Regulation (EC) No 1907/2006

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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 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.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

High power 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

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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.

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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.

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

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
78-83-1	2-Methylpropan-1-ol	50	154		TWA (8 h)	WEL
		75	231		STEL (15 min)	WEL
1634-04-4	Methyl-tert-butyl ether	50	183,5		TWA (8 h)	WEL
		100	367		STEL (15 min)	WEL
67-63-0	Propan-2-ol	400	999		TWA (8 h)	WEL
		500	1250		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)

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8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.

DIN EN 166

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 FN 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. When exceeding the relevant workplace exposure limits, note the following: Suitable respiratory protective equipment: Combination filter device (DIN EN 141).. Filtering device with filter or ventilator filtering device of type: A Observe the wear time limits as specified by the manufacturer. Observe legal regulations and provisions.

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: Colour:	Liquid brown		
Odour:	solvent like		Toot mothed
			Test method
pH-Value (at 20 °C):		not determined	DIN 19268
Changes in the physical state			
Melting point:		not determined	
Initial boiling point and boiling range:		55 °C	
Flash point:		-28 °C	ISO 3679
Flammability			
Solid:		not applicable	
Gas:		not applicable	
Lower explosion limits:		0,6 vol. %	
Upper explosion limits:		12 vol. %	
Auto-ignition temperature			

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Solid: Gas:	not applicable not applicable		
Decomposition temperature:	not determined		
Oxidizing properties Not oxidising.			
Vapour pressure:	not determined		
Density (at 20 °C):	0,795 g/cm³	DIN 51757	
Water solubility:	The study does not need to be conducted because the substance is known to be insoluble in water.		
Solubility in other solvents not determined			
Partition coefficient:	not determined		
Viscosity / dynamic:		DIN 53019-1	
Viscosity / kinematic: (at 40 °C)	< 7 mm²/s	DIN EN ISO 3104	
Flow time: (at 20 °C)		DIN EN ISO 2431	
Vapour density:	not determined		
Evaporation rate:	not determined		
9.2. Other information			
Solid content:	not determined		

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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.

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Acute toxicity

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

CAS No	Chemical name							
	Exposure route	Dose		Species	Source	Method		
64742-48-9	Hydrocarbons, C9 - C11	Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates						
	oral	LD50 mg/kg	> 5000	Rat				
	dermal	LD50 mg/kg	> 5000	Rabbit				
	inhalation (4 h) vapour	LC50	4951 mg/l	Rat				
78-83-1	2-methylpropan-1-ol; iso	-butanol						
	oral	LD50 mg/kg	> 2830	Rat				
	dermal	LD50 mg/kg	> 2000	Rat				
	inhalation (4 h) vapour	LC50	> 24 mg/l	Rat				
67-63-0	2-Propanol							
	oral	LD50 mg/kg	5280	Rat				
	dermal	LD50 mg/kg	> 2000	Rabbit				
	inhalation (4 h) vapour	LC50	47,5 mg/l	Rat				
1634-04-4	tert-butyl methyl ether; M	ITBE; 2-metho	oxy-2-methy	lpropane				
	oral	LD50 mg/kg	3866	Rat				
	dermal	LD50 mg/kg	> 2000	Rat				
	inhalation (4 h) vapour	LC50	85 mg/l	Rat				

Irritation and corrosivity

Causes skin irritation.

Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

No indications of human carcinogenicity exist.

No indications of human germ cell mutagenicity exist.

No indications of human reproductive toxicity exist.

STOT-single exposure

May cause respiratory irritation. (2-methylpropan-1-ol; iso-butanol) May cause drowsiness or dizziness. (Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates; 2-methylpropan-1-ol; iso-butanol; 2-Propanol)

STOT-repeated exposure

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

Aspiration hazard

May be fatal if swallowed and enters airways. (Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates)

Specific effects in experiment on an animal

No information available.

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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

The product is not: Ecotoxic.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
64742-48-9	-9 Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates						
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Pimephales promelas		
	Acute algae toxicity	ErC50 mg/l	> 100	72 h	Pseudokirchneriella subcapitata		
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna		
78-83-1	2-methylpropan-1-ol; iso-l	outanol					
	Acute fish toxicity	LC50 mg/l	1430	96 h	Pimephales promelas		
	Acute algae toxicity	ErC50 mg/l	1250		Desmodesmus subspicatus		
	Acute crustacea toxicity	EC50 mg/l	1439	48 h	Daphnia magna		
67-63-0	2-Propanol						
	Acute fish toxicity	LC50 mg/l	9640	96 h	Pimephales promelas		
	Acute algae toxicity	ErC50 mg/l	> 100	72 h	Desmodesmus subspicatus		
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna		
1634-04-4	tert-butyl methyl ether; M	TBE; 2-meth	oxy-2-methy	Ipropane			
	Acute fish toxicity	LC50	672 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute algae toxicity	ErC50 mg/l	> 800	72 h	Desmodesmus subspicatus		
	Acute crustacea toxicity	EC50	651 mg/l	48 h	Daphnia magna		

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64742-48-9	Hydrocarbons, C9 - C11, n-alkanes, iso-alkanes, cyclics, < 2 % aromates	5
78-83-1	2-methylpropan-1-ol; iso-butanol	0,79
67-63-0	2-Propanol	0,05
1634-04-4	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	0,94

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.

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12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

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

Waste disposal number of waste from residues/unused products

070704 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; other organic solvents, washing liquids and mother liquors; hazardous waste

Waste disposal number of used product

070704 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; other organic solvents, washing liquids and mother liquors; 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

Wash with plenty of water. Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

UN 1993
FLAMMABLE LIQUID, N.O.S. (tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane; 2-Propanol)
3
II
3
F1
274 601 640C
1 L
E2
2
33
D/E
UN 1993
FLAMMABLE LIQUID, N.O.S. (tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane; 2-Propanol)
3
II
3
F1
274 601 640C
1 L

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Excepted quantity:	E2					
Marine transport (IMDG)						
14.1. UN number:	UN 1993					
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (tert-butyl methyl ether, propan-2-ol)					
14.3. Transport hazard class(es):	3					
14.4. Packing group:	II					
Hazard label:	3					
Marine pollutant:	no					
Special Provisions: Limited quantity:	274 1 L					
Excepted quantity:	E2					
EmS:	–– F-E, S-E					
Air transport (ICAO-TI/IATA-DGR)						
<u>14.1. UN number:</u>	UN 1993					
14.2. UN proper shipping name:	FLAMMABLE LIQUID, N.O.S. (tert-butyl methyl ether, propan-2-ol)					
14.3. Transport hazard class(es):	3					
14.4. Packing group:	II					
Hazard label:	3					
Special Provisions:	A3					
Limited quantity Passenger:	1L					
Passenger LQ: Excepted quantity:	Y341 E2					
IATA-packing instructions - Passenger:	353					
IATA-packing instructions - Lassenger:	555 5 L					
IATA-packing instructions - Cargo:	364					
IATA-max. quantity - Cargo:	60 L					
14.5. Environmental hazards						
ENVIRONMENTALLY HAZARDOUS:	no					
14.6. Special precautions for user Warning: Combustible liquid.						
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 requ	lations/legislation specific for the substance or mixture					
EU regulatory information	<u> </u>					
Restrictions on use (REACH, annex XVII):						
	Ikanes, iso-alkanes, cyclics, < 2 % aromates					
2010/75/EU (VOC):	No information available.					
2004/42/EC (VOC):	No information available.					
Additional information						
Safety Data Sheet according to Regula	ation (EC) No. 1907/2006 (REACH)					
National regulatory information						
Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juver work protection guideline' (94/33/EC).	ile				
Water contaminating class (D):	1 - slightly water contaminating					

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SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,15.

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)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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