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

1.1. Product identifier

685 System Protection N468500K5AB

CAS No:	66204-44-2
Index No:	612-290-00-1
EC No:	266-257-8

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 number:

+49 (0) 30 30 686 790 (Giftnotruf Berlin)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Carcinogenicity: Carc. 1B
Germ cell mutagenicity: Muta. 2
Acute toxicity: Acute Tox. 3
Acute toxicity: Acute Tox. 4
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Corr. 1B
Serious eye damage/eye irritation: Eye Dam. 1
Respiratory or skin sensitisation: Skin Sens. 1A
Specific target organ toxicity - repeated exposure: STOT RE 2
Hazardous to the aquatic environment: Aquatic Chronic 2
Hazard Statements:
May cause cancer.
Suspected of causing genetic defects.
Toxic in contact with skin.
Harmful if inhaled.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

2.2. Label elements

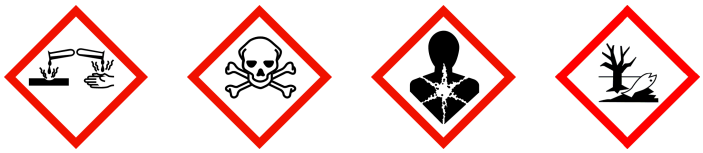
Regulation (EC) No. 1272/2008

Hazard components for labelling

reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO]

Signal word: Danger

Pictograms:



Hazard statements

H302+H332	Harmful if swallowed or if inhaled.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe vapours.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P501	Dispose of contents/container according to the official regulations.

Special labelling of certain mixtures

EUH071	Corrosive to the respiratory tract.

2.3. Other hazards

Use biocides safely. Always read the label and product information before use.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
66204-44-2	reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO]			50 - <= 100 %
	266-235-8	612-290-00-1		
	Carc. 1B, Muta. 2, Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1A, STOT RE 2, Aquatic Chronic 2; H350 H341 H311 H332 H302 H314 H318 H317 H373 H411 EUH071			

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 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

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

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.

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)

@000000000214

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

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
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.
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:	Liquid
Colour:	
Odour:	amine-like

		Test method
pH-Value (at 20 °C):	9,5	
Changes in the physical state		
Melting point:	not determined	
Initial boiling point and boiling range:	204 °C	
Sublimation point:	not applicable	
Softening point:	not determined	
Pour point:	not determined	
Flash point:	> 100 °C	
Sustaining combustion:	No data available	
Flammability		
Solid:	not applicable	
Gas:	not applicable	
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Ignition temperature:	not determined	
Auto-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not determined	

Oxidizing properties
Not oxidising.

Vapour pressure:	not determined	
Vapour pressure: (at 20 °C)	2 hPa	
Density (at 20 °C):	1,049 g/cm³	DIN 51757
Water solubility:	easily soluble.	

Solubility in other solvents
not determined

Partition coefficient:	not determined	
Viscosity / dynamic:		DIN 53019-1
Vapour density:	not determined	
Evaporation rate:	not determined	

9.2. Other information

Solid content:	not determined	

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability
The product is stable under normal conditions.

10.3. Possibility of hazardous reactions
Do not mix with acids.

10.4. Conditions to avoid
The product is chemically stable under recommended conditions of storage, use and temperature.

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
Toxic in contact with skin.
Harmful if swallowed.
Harmful if inhaled.

CAS No	Chemical name				
	Exposure route	Dose		Species	Source
66204-44-2	reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO]				
	oral	LD50 mg/kg	>500-2000	Rat	
	dermal	ATE	300 mg/kg		
	inhalation (4 h) aerosol	LC50	>1,01 mg/l	Rat	

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.

Sensitising effects

May cause an allergic skin reaction. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing genetic defects. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])
May cause cancer. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])
Reproductive toxicity: 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

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

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])

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

Aquatic toxicity: The classification criteria for this hazard class are not met by definition.

CAS No	Chemical name					
	Aquatic toxicity	Dose		[h] | [d]	Species	Source
66204-44-2	reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO]					
	Acute fish toxicity	LC50	10-100 mg/l	96 h	Brachydanio rerio (zebra-fish)	
	Acute algae toxicity	ErC50	2-10 mg/l	96 h	Desmodesmus subspicatus	
	Acute crustacea toxicity	EC50	10-100 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
66204-44-2	reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO]	-0,3

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

No special environmental measures are necessary.

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

070404 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides; other organic solvents, washing liquids and mother liquors; hazardous waste

List of Wastes Code - used product

070404 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides; other organic solvents, washing liquids and mother liquors; 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

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

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274 802
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Marine pollutant:	yes
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (reaction products of paraformaldehyde and 2-hydroxypropylamine (ratio 3:2); [formaldehyde released from 3,3'-methylenebis[5-methyloxazolidine]; [formaldehyde released from oxazolidin]; [MBO])

14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Special Provisions:	A3 A803
Limited quantity Passenger:	0.5 L
Passenger LQ:	Y840
Excepted quantity:	E2
IATA-packing instructions - Passenger:	851
IATA-max. quantity - Passenger:	1 L
IATA-packing instructions - Cargo:	855
IATA-max. quantity - Cargo:	30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	yes
Danger releasing substance:	3,3'-methylenebis[5-methyloxazolidine]

14.6. Special precautions for user

Warning: strongly corrosive.

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

2010/75/EU (VOC):	No information available.
2004/42/EC (VOC):	No information available.

Additional information

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

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	1 - slightly hazardous to water

Additional information

Information in accordance with Regulation (EU) Nr. 528/2012

	g/100 g
3,3'-Methylenbis[5-methyloxazolidine N-58106	100g

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,3,9.

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)

H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

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.