SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Date of issue: 22.07.2013 Version 1.0

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

1.1 Product identifier

Catalogue No.	173703
Product name	Nitrate Cell Test N2/25 Method: photometric 0.5 - 25.0 mg/l NO_3-N 2.2 - 110.7 mg/l NO_3^- NO_3^-
REACH Registration Number	This product is a mixture. REACH Registration Number see section 3.

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

1.3 Details of the supplier of the safety data sheet

Company Responsible Department	WTW * 82362 Weilheim * Germany * Tel. ++49(0)881 183-0 e-mail: Info.WTW@Xyleminc.com

1.4 Emergency telephone number

+49 (0)6151/722440 * Telefax: +49 (0)6151/727780

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1, H290
Skin corrosion, Category 1A, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

C	Corrosive	R35

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word
Danger

Hazard statements
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements
Prevention
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Reduced labelling (≤125 ml)
Hazard pictograms

Signal word
Danger

Hazard statements
H314 Causes severe skin burns and eye damage.

Precautionary statements
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

2.3 Other hazards
None known.

SECTION 3. Composition/information on ingredients
Chemical nature Mixture of acids.

3.1 Substance
not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)
Chemical Name (Concentration)

CAS-No.	Registration number	Classification
sulphuric acid *(>= 25 % - < 50 %)*		
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.		
7664-93-9	01-2119458838-20-XXXX	Corrosive to metals, Category 1, H290 Skin corrosion, Category 1A, H314

phosphoric acid *(>= 25 % - < 50 %)*

7664-38-2	01-2119485924-24-XXXX	Skin corrosion, Category 1B, H314 Corrosive to metals, Category 1, H290

For the full text of the H-Statements mentioned in this Section, see Section 16.

Hazardous components (1999/45/EC)

Chemical Name (Concentration)
CAS-No. Classification
sulphuric acid *(>= 25 % - < 50 %)*
7664-93-9 C, Corrosive; R35

phosphoric acid *(>= 25 % - < 50 %)*
7664-38-2 C, Corrosive; R34

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice
First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Nausea, Vomiting, Diarrhoea
Risk of blindness!

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.
Ambient fire may liberate hazardous vapours.
Fire may cause evolution of:
Sulphur oxides, Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H^+, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +15°C to +25°C.

The data applies to the entire pack.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Components

Basis	Value	Threshold limits	Remarks
phosphoric acid (7664-38-2)			
ECTLV	Short Term Exposure Limit (STEL):	2 mg/m³	
	Time Weighted Average (TWA):	1 mg/m³	
EH40 WEL	Short Term Exposure Limit (STEL):	2 mg/m³	
	Time Weighted Average (TWA):	1 mg/m³	

Derived No Effect Level (DNEL)

sulphuric acid (7664-93-9)

Worker DNEL, acute	Local effects	inhalation	0.1 mg/m³
Worker DNEL, longterm	Local effects	inhalation	0.05 mg/m³

Recommended monitoring procedures

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

Predicted No Effect Concentration (PNEC)

sulphuric acid (7664-93-9)

PNEC Fresh water	0.0025 mg/l
PNEC Fresh water sediment	0.002 mg/kg
PNEC Marine water	0.00025 mg/l
PNEC Marine sediment	0.002 mg/kg
PNEC Sewage treatment plant	8.8 mg/l

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

Glove material: natural latex

	Glove thickness:	0.6 mm
	Break through time:	> 480 min
splash contact:		
	Glove material:	natural latex
	Glove thickness:	0.6 mm
	Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 706 Lapren® (full contact), KCL 706 Lapren® (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment
Acid-resistant protective clothing

Respiratory protection
required when vapours/aerosols are generated.
Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	odourless
Odour Threshold	not applicable
pH	at 20 °C strongly acid
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evapouration rate	No information available.

Flammability (solid, gas)	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Relative density	ca.1.73 g/cm³ at 20 °C
Water solubility	at 25 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Corrosion	May be corrosive to metals.

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, Aldehydes, acetonitrile, Alkaline earth metals, alkalines, Acids, alkaline earth compounds, Metals, metal alloys, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, organic nitro compounds, anilines, Peroxides, picrates, nitrides, lithium silicide, iron(III) compounds, bromates, chlorates, Amines, perchlorates, hydrogen peroxide

10.4 Conditions to avoid

no information available

10.5 Incompatible materials
animal/vegetable tissues, Metals
Gives off hydrogen by reaction with metals.

10.6 Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects
Mixture

Acute oral toxicity
Symptoms: Nausea, Vomiting

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity
This information is not available.

Skin irritation
Mixture causes severe burns.

Eye irritation
Mixture causes serious eye damage.
Risk of blindness!

Sensitisation
This information is not available.

Germ cell mutagenicity
This information is not available.

Carcinogenicity
This information is not available.

Reproductive toxicity
This information is not available.

Teratogenicity
This information is not available.

Specific target organ toxicity - single exposure
This information is not available.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

11.2 Further information
After uptake:
strong pain (risk of perforation!), Diarrhoea
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Components

sulphuric acid

Acute inhalation toxicity
LC50 rat: 0.25 mg/l; 4 h (IUCLID)

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
(HSDB)

phosphoric acid

Acute oral toxicity
LD50 rat: 1,530 mg/kg (IUCLID) (Regulation (EC) No 1272/2008, Annex VI)

Acute inhalation toxicity
LC50 rat: > 0.85 mg/l; 1 h (RTECS)

Acute dermal toxicity
LD50 rabbit: 2,740 mg/kg (IUCLID)

Skin irritation
rabbit
Result: Causes burns.
(IUCLID)

Eye irritation
rabbit
Result: Causes burns.
(IUCLID)

Sensitisation
Patch test: human
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

SECTION 12. Ecological information

Mixture

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
No information available.

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information
Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Endangers drinking-water supplies if allowed to enter soil or water. Neutralisation possible in waste water treatment plants. Does not cause biological oxygen deficit. Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies.
Discharge into the environment must be avoided.

Components
sulphuric acid
Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 29 mg/l; 24 h (IUCLID)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

phosphoric acid
Toxicity to fish
LC50 Gambusia affinis (Mosquito fish): 138 mg/l; 96 h (External MSDS)

Toxicity to bacteria
EC50 activated sludge: 270 mg/l(IUCLID)

Biodegradability

Does not cause biological oxygen deficit.

SECTION 13. Disposal considerations

Waste treatment methods
Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-P

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Directive 96/82/EC does not apply
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work.
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals	not regulated
Substances of very high concern (SVHC)	This product does not contain substances of very high concern above the respective regulatory limit (> 0.1 % (w/w) Regulation (EC) No 1907/2006 (REACH), Article 57).

National legislation
Storage class 3
The data applies to the entire pack.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Full text of R-phrases referred to under sections 2 and 3

R34	Causes burns.
R35	Causes severe burns.

Training advice
Provide adequate information, instruction and training for operators.

Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	 C	Corrosive
R-phrase(s)	35	Causes severe burns.
S-phrase(s)	26-36/37/39-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Date of issue: 22.07.2013 Version 1.0

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

1.1 Product identifier

Catalogue No.	173703
Product name	Nitrate Cell Test N2/25 Method: photometric 0.5 - 25.0 mg/l NO_3-N 2.2 - 110.7 mg/l NO_3^- NO_3-1K
REACH Registration Number	This product is a mixture. REACH Registration Number see section 3.

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

1.3 Details of the supplier of the safety data sheet

Company Responsible Department	WTW * 82362 Weilheim * Germany * Tel. ++49(0)881 183-0 e-mail: Info.WTW@Xyleminc.com

1.4 Emergency telephone number

+49 (0)6151/722440 * Telefax: +49 (0)6151/727780

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 3, H226
Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

Flammable	R10 R67

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word
Warning

Hazard statements
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements
Prevention
P210 Keep away from heat.
Response
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Reduced labelling (≤125 ml)
Hazard pictograms

Signal word
Warning

2.3 Other hazards
None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous propanolic solution.

3.1 Substance
not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)
Chemical Name (Concentration)

CAS-No.	Registration number	Classification
2-Propanol *(>= 15 % - < 20 %)*		
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.		
67-63-0	01-2119457558-25-XXXX	Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319 Specific target organ toxicity - single exposure, Category 3, H336
Xylenol *(>= 0.25 % - < 1 %)*		
576-26-1	*)	Acute toxicity, Category 3, H311 Acute toxicity, Category 3, H301 Skin corrosion, Category 1B, H314 Chronic aquatic toxicity, Category 2, H411

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

Hazardous components (1999/45/EC)

Chemical Name (Concentration)
CAS-No. Classification
2-Propanol *(>= 15 % - < 20 %)*
67-63-0 F, Highly flammable; R11
Xi, Irritant; R36
R67

Xylenol *(< 1 %)*
576-26-1 T, Toxic; R24/25
C, Corrosive; R34
N, Dangerous for the environment; R51/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, respiratory paralysis, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Headache, drowziness, Coma
Drying-out effect resulting in rough and chapped skin.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions
Do not empty into drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +15°C to +25°C.

The data applies to the entire pack.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Components

Basis	Value	Threshold limits	Remarks
2-Propanol (67-63-0)			
EH40 WEL	Short Term Exposure Limit (STEL):	500 ppm 1,250 mg/m³	
	Time Weighted Average (TWA):	400 ppm 999 mg/m³	

Derived No Effect Level (DNEL)

2-Propanol (67-63-0)

Worker DNEL, longterm	Systemic effects	inhalation	500 mg/m³
Worker DNEL, longterm	Systemic effects	dermal	888 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	89 mg/m³
Consumer DNEL, longterm	Systemic effects	dermal	319 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	oral	26 mg/kg Body weight

Recommended monitoring procedures

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

Predicted No Effect Concentration (PNEC)

2-Propanol (67-63-0)

PNEC Fresh water	140.9 mg/l
PNEC Fresh water sediment	552 mg/kg
PNEC Marine water	140.9 mg/l
PNEC Marine sediment	552 mg/kg
PNEC Soil	28 mg/kg

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	> 480 min

splash contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 898 Butoject® (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment
Flame retardant antistatic protective clothing

Respiratory protection
required when vapours/aerosols are generated.
Recommended Filter type: ABEK-filter
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not empty into drains.
Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	light yellow
Odour	of solvents
Odour Threshold	No information available.
pH	5.0 - 5.5 at 25 °C (undiluted)
Melting point	No information available.

Boiling point	No information available.
Flash point	29 °C Method: DIN 51755 Part 1
Evapouration rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Relative density	0.97 g/cm³ at 20 °C
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

Vapour/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Alkali metals, Alkaline earth metals, Aluminium

Exothermic reaction with:

Oxidizing agents, Nitric acid, Aldehydes, Amines, fuming sulfuric acid, Iron

Risk of explosion with:

chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides

10.4 Conditions to avoid
Heating.

10.5 Incompatible materials
rubber, various plastics

10.6 Hazardous decomposition products
no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity
Acute toxicity estimate: > 2,000 mg/kg
Calculation method

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Acute inhalation toxicity

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

Acute dermal toxicity
Acute toxicity estimate : > 2,000 mg/kg
Calculation method

Skin irritation
slight irritation
Drying-out effect resulting in rough and chapped skin.

Eye irritation
Mixture causes serious eye irritation.

Sensitisation
This information is not available.

Germ cell mutagenicity
This information is not available.

Carcinogenicity
This information is not available.

Reproductive toxicity
This information is not available.

Teratogenicity
This information is not available.

Specific target organ toxicity - single exposure
This information is not available.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

11.2 Further information

Systemic effects:
After absorption:
Headache, Dizziness, inebriation, Unconsciousness, narcosis
After uptake of large quantities:
respiratory paralysis, Coma
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Components

2-Propanol

Acute oral toxicity
LDLO human: 3,570 mg/kg (RTECS)

LD50 rat: 5,045 mg/kg (RTECS)

Acute inhalation toxicity
LC50 rat: 46.5 mg/l; 4 h (External MSDS)

Acute dermal toxicity
LD50 rabbit: 12,800 mg/kg (RTECS)

Eye irritation
rabbit
Result: Eye irritation
(RTECS)

Sensitisation
Sensitisation test: guinea pig
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vivo
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(IUCLID)

Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Carcinogenicity
Did not show carcinogenic effects in animal experiments. (IUCLID)

Reproductive toxicity
No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity
Did not show teratogenic effects in animal experiments. (IUCLID)

Xylenol

Acute oral toxicity
LD50 rat: 296 mg/kg (IUCLID)

Acute dermal toxicity
LD50 rabbit: 1,000 mg/kg (IUCLID)

Skin irritation
rat
Result: Irritations
(HSDB)

Eye irritation
rabbit
Result: Causes burns.
(Lit.)

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

SECTION 12. Ecological information

Mixture

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
No information available.

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
Additional ecological information
Discharge into the environment must be avoided.

Components

2-Propanol

Toxicity to fish
LC50 Lepomis macrochirus (Bluegill sunfish): 1,400 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: 4,930 mg/l; 72 h (maximum permissible toxic concentration) (Lit.)

EC50 Daphnia magna (Water flea): 13,299 mg/l; 48 h (IUCLID)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h (IUCLID)

Toxicity to bacteria
EC5 Pseudomonas putida: 1,050 mg/l; 16 h (Lit.)

Biodegradability
95 %; 21 d
OECD Test Guideline 301E
Readily biodegradable.

Theoretical oxygen demand (ThOD)
2,400 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 49 %
(IUCLID)

Ratio COD/ThBOD
96 %
(Lit.)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Xylenol

Toxicity to fish
LC50 Pimephales promelas (fathead minnow): 22 mg/l; 96 h (Hommel)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 11.2 mg/l; 48 h (IUCLID)

EC100 Tetrahymen pyriformis: 325 mg/l; 24 h (IUCLID)

Biodegradability
2 %; 28 d
MITI test
Not readily biodegradable.

SECTION 13. Disposal considerations

Waste treatment methods
Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 3316
14.2 Proper shipping name	CHEMICAL KIT
14.3 Class	9
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
EmS	F-A S-P

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Flammable. 6 Quantity 1: 5,000 t Quantity 2: 50,000 t
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	not regulated
Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals	not regulated
Substances of very high concern (SVHC)	This product does not contain substances of very high concern above the respective regulatory limit (> 0.1 % (w/w) Regulation (EC) No 1907/2006 (REACH), Article 57).

National legislation
Storage class 3
The data applies to the entire pack.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3

R10	Flammable.
R11	Highly flammable.
R24/25	Toxic in contact with skin and if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67	Vapours may cause drowsiness and dizziness.

Training advice
Provide adequate information, instruction and training for operators.

Labelling (67/548/EEC or 1999/45/EC)
R-phrase(s) 10-67 Flammable. Vapours may cause drowsiness and dizziness.

Reduced labelling (≤125 ml)
R-phrase(s) 10 Flammable.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.