

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 23.04.2004
Supersedes edition of 09.12.1999

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N
25 Tests Spectroquant®
N-1K

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0
Emergency telephone No.: +49 (0)6151/72112 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

Mixture of inorganic compounds.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Potassium persulfate 7727-21-1	231-781-8	016-061-00-1	O; R8 Xn; R22-42/43 Xi; R36/37/38	≥ 50 %
Potassium carbonate 584-08-7	209-529-3		Xi; R36/37/38	≥ 20 - < 50 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Contact with combustible material may cause fire. Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

4. First aid measures

After inhalation: fresh air. Consult doctor if feeling unwell.
After skin contact: wash off with plenty of water. Remove contaminated clothing.
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.
After swallowing: immediately make victim drink plenty of water. Call in physician.

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5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible. Fire-promoting. Keep away from combustible materials. Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: sulfur oxides.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Avoid inhalation of dusts. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling:

Notes for safe handling:
Work under hood. Do not inhale substance.

Storage:

Tightly closed. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Potassium peroxodisulphate
Sensitization	Sah Danger of sensitization of the airways and the skin

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

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Respiratory protection: required when dusts are generated.

Eye protection: required

Hand protection: In full contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

In splash contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 740 Dermatril® (full contact), 740 Dermatril® (splash contact).

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form: solid

Colour: white

Odour: odourless

pH value not available

Melting point not available

Boiling point not available

Ignition temperature not available

Flash point not available

Explosion limits lower not available

upper not available

Density not available

Bulk density 750-800 kg/m³

Solubility in water (25 °C) soluble

Thermal decomposition > 100 °C

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10. Stability and reactivity

Conditions to be avoided

warmth/heat

Substances to be avoided

water, bases, strong alkalis, acids, metals, heavy metals, silver compounds, reducing agents, combustible substances.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

fire-promoting substance;
strong oxidizing agent.

11. Toxicological information

Acute toxicity

LD₅₀ (oral, rat): 802 mg/kg (chief component).

Further toxicological information

Properties to be expected on the basis of the main component of the preparation:

After inhalation of dust: mucosal irritations, coughing, dyspnoea. Possible damages: pulmonary oedema. Risk of airways sensitization.

After skin contact: Irritations. Risk of skin sensitization.

After eye contact: Irritations.

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Further data

Further hazardous properties cannot be excluded.
The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Biological effects:

Reacts with water to form toxic decomposition products.

Further ecologic data:

Do not allow to enter waters, waste water, or soil!

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13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, II
Ems F-A S-P

Air CAO, PAX
CHEMICAL KIT, 9, UN 3316, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol:	O Xn	Oxidizing Harmful
R-phrases:	22-42/43	Harmful if swallowed. May cause sensitization by inhalation and skin contact.
S-phrases:	22-24-37-45	Do not breathe dust. Avoid contact with skin. Wear suitable gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
contains:	Potassium persulfate	

German regulations

Water pollution class	1 (slightly polluting substance) VwVwS Anh. 4
Storage class VCI	5.1 B
Data sheet of the Chemical Professional Association	M004 Irritant substances/corrosive substances M050 Dealing with harmful substances

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Local regulations on chemical accidents: 3

The employment restrictions for young workers in accordance with section 22 of the Youth Employment Protection Law (JArbSchG) are to be observed.

The employment restrictions for expectant and nursing mothers in accordance with sections 4 and 5 of the Maternity Protection Guideline (MuSchRiV) are to be observed.

16. Other information

Text of any R phrases referred to under heading 2:

8 Contact with combustible material may cause fire.
22 Harmful if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.
42/43 May cause sensitization by inhalation and skin contact.

Reduced labelling on the container due to small quantity.

Reason for alteration

Chapter 14: transport information.

General update.

Contact for information:

HSSE-C/CI * Tel: +49 (0)6151/722775 * Fax: +49 (0)6151/726433 * e-mail:prodsafe@merck.de

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

Safety Data Sheet

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Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0
Emergency telephone No.: +49 (0)6151/72112 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

Aqueous solution.

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Sodium hydroxide 1310-73-2	215-185-5	011-002-00-6	C; R35	10 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Causes severe burns.

4. First aid measures

After inhalation: fresh air. Call in physician.
After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400.
Immediately remove contaminated clothing.
After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.
After swallowing: make victim drink plenty of water (if necessary several litres), avoid vomiting (risk of perforation!). Immediately call in physician. Do not attempt to neutralize.

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5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible. Ambient fire may liberate hazardous vapours.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up with liquid-absorbent and neutralizing material (e.g. Chemisorb® OH⁻, Art. No. 101596). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At +15°C to +25°C.

Requirements for storage rooms and containers:
No aluminium, tin, or zinc containers.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

TRGS 900

Name	Sodium hydroxide
Value	2 mg/m ³ inhalable fraction
Peak limit	=1= Concentration must not exceed limit concentration.
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).

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Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection: In full contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

In splash contact:
Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 740 Dermatril® (full contact), 740 Dermatril® (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 and supplied by us as well as to the purpose specified by us. 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: Suitable protective clothing.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	odourless
pH value	(20 °C) ~ 13.8
Melting point	not available
Boiling point	not available
Ignition temperature	not available
Flash point	not available
Explosion limits	lower not available upper not available
Density	(20 °C) 1.11 g/cm ³
Solubility in water	(20 °C) soluble

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10. Stability and reactivity

Conditions to be avoided

no information available

Substances to be avoided

metals, light metals: Formed could be: hydrogen (risk of explosion!).
ammonium compounds: Formed could be: ammonia.
acids.

Hazardous decomposition products

no information available

11. Toxicological information

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Further toxicological information

Property that must be anticipated on the basis from the components of the preparation:

After inhalation: burns of mucous membranes.

After skin contact: burns, necrosis.

After eye contact: burns, necrosis, Risk of blindness!

After swallowing: burns in mouth, throat, oesophagus and gastrointestinal tract. Risk of perforation in the oesophagus and stomach.

Systemic effects: collapse, death.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Biological effects:

Toxic effect on fish and plankton. Harmful effect due to pH shift. Does not cause biological oxygen deficit. Neutralization possible in waste water treatment plants.

Fish toxicity:

Onchorhynchus mykiss LC₅₀: 45.4 mg/l /96 h (anhydrous substance).

L.macrochirus LC₅₀: 99 mg/l /48 h (anhydrous substance).

Daphnia toxicity:

Daphnia magna EC₅₀: 76 mg/l /24 h (anhydrous substance).

Further ecologic data:

Do not allow to enter waters, waste water, or soil!

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14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, II
Ems F-A S-P

Air CAO, PAX
CHEMICAL KIT, 9, UN 3316, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
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15. Regulatory information

Labelling according to EC Directives

Symbol:	C	Corrosive
R-phrases:	35	Causes severe burns.
S-phrases:	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).

contains: Sodium hydroxide

German regulations

Water pollution class 1 (slightly polluting substance) VwVwS Anh. 4

Storage class VCI 8 B

Data sheet of the Chemical Professional Association M004 Irritant substances/corrosive substances

M051 Dangerous chemical substances

M053 General industrial safety measures for dangerous substances.

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Spectroquant®
N-2K

The employment restrictions for young workers in accordance with section 22 of the Youth Employment Protection Law (JArbSchG) are to be observed.

16. Other information

Text of any R phrases referred to under heading 2:

35 Causes severe burns.

Reason for alteration

Chapter 14: transport information.

General update.

Contact for information:

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25 Tests Spectroquant®
N-3K

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0
Emergency telephone No.: +49 (0)6151/72112 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

CAS-No.: 99-10-5
M: 154.12 g/mol
Formula Hill: C₇H₆O₄
EC-No.: 202-730-7

3. Hazards identification

No hazardous product as specified in Directive 67/548/EEC.

4. 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 with the eyelid held wide open. Call in ophthalmologist if necessary.
After swallowing: make victim drink plenty of water. Consult doctor if feeling unwell.

5. Fire-fighting measures

Suitable extinguishing media:
Water, foam, powder.

Special risks:
Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus.

Other information:
Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

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Spectroquant®
N-3K

6. Accidental release measures

Person-related precautionary measures:
Avoid inhalation of dusts.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. Dry. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when dusts are generated.

Eye protection: required

Hand protection:

In full contact:

Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

In splash contact:

Glove material: nitrile rubber
Layer thickness: 0.11 mm
Breakthrough time: > 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 740 Dermatril® (full contact), 740 Dermatril® (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 and supplied by us as well as to the purpose specified by us. 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).

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Industrial hygiene:
Change contaminated clothing. Wash hands after working with substance.

9. Physical and chemical properties

Form:	solid
Colour:	colourless to beige
Odour:	odourless
pH value at 10 g/l H ₂ O	(25 °C) ~ 2.3
Melting point	236-238 °C
Boiling point	not available
Ignition temperature	> 500 °C
Flash point	> 200 °C
Explosion limits	lower not available upper not available
Density	not available
Bulk density	~ 700 kg/m ³
Solubility in water	(20 °C) 84 g/l
Thermal decomposition	> 236 °C
log Pow:	0.86

10. Stability and reactivity

Conditions to be avoided

Heating.

Substances to be avoided

fluorine, oxygen, strong oxidizing agents.

Hazardous decomposition products

no information available

11. Toxicological information

Acute toxicity

LD₅₀ (oral, rat): 4160 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): No irritation.

Skin irritation test (rabbit): No irritation.

Subacute to chronic toxicity

Bacterial mutagenicity: Ames test: negative.

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Further toxicological information

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Biologic degradation:
Biological degradability: good.

Behavior in environmental compartments:
Distribution: log p(o/w): 0.86.
No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:
Biological effects:
Fish toxicity: *Lidus* LC₀: 500 mg/l /48 h.
Bacterial toxicity: *Pseudomonas fluorescens* EC₀: 100 mg/l.

Further ecologic data:
No ecological problems are to be expected when the product is handled and used with due care and attention.

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

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Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

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15. Regulatory information

Labelling according to EC Directives

Symbol: ---

R-phrases: ---

S-phrases: ---

German regulations

Water pollution class 1 (slightly polluting substance) VwVwS Anh. 3 KennNr. 4561

Storage class VCI 10-13

16. Other information

Reason for alteration

Chapter 14: transport information.

General update.

Contact for information:

HSSE-C/CI * Tel: +49 (0)6151/722775 * Fax: +49 (0)6151/726433 * e-mail:prodsafe@merck.de

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Küvettenreagenz

Use of the substance/preparation

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Company/undertaking identification

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Emergency telephone No.: +49 (0)6151/72112 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

CAS-No.:	7664-93-9	EC-Index-No.:	016-020-00-8
M:	98.08 g/mol	EC-No.:	231-639-5
Formula Hill:	H ₂ O ₄ S		
Chemical formula:	H ₂ SO ₄		

Hazardous ingredients:

Name according to EC Directives:

CAS-No.	EC No.	EC-Index-No.	Classification	Content:
Sulphuric acid				
7664-93-9	231-639-5	016-020-00-8	C; R35	95 - < 97 %

(Full text of R-Phrases in heading 16)

3. Hazards identification

Causes severe burns.

4. First aid measures

After inhalation: fresh air. Call in physician.
After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing.
After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.
After swallowing: make victim drink plenty of water (if necessary several litres), avoid vomiting (risk of perforation!). Immediately call in physician. Do not attempt to neutralize.

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Küvettenreagenz

5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible. Ambient fire may liberate hazardous vapours. The following may develop in event of fire: sulfur oxides.

Special protective equipment for fire fighting:
Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:
Prevent fire-fighting water from entering surface water or groundwater. Contain escaping vapours with water.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system.

Procedures for cleaning / absorption:
Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® H⁺, Art. No. 101595). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Specific control parameter

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Küvettenreagenz

TRGS 900

Name	Sulfuric acid
Kind of use	others
Value	0.1 mg/m ³ Inhalable fraction. The following regulation applies to the peak limit: short-term exposure duration: max. 15 minutes as mean value, frequency per shift: 4, time interval: min. 1 hour
Peak limit	1 Concentration must not exceed limit concentration.
Embryotoxic	Y Substances with which no foetotoxic risk is to be expected when observing the maximum allowable concentration (MAC Germany) and the biological tolerance value at the workplace (BAT Germany).

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated.

Eye protection: required

Hand protection:

In full contact:

Glove material: viton
Layer thickness: 0.70 mm
Breakthrough time: > 480 Min.

In splash contact:

Glove material: butyl rubber
Layer thickness: 0.7 mm
Breakthrough time: > 120 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 890 Vitoject® (full contact), 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 and supplied by us as well as to the purpose specified by us. 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.

Industrial hygiene:

Change contaminated clothing and immerse in water. Apply skin-protective barrier cream. Wash hands and face after working with substance.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Küvettenreagenz

9. Physical and chemical properties

Form:		liquid	
Colour:		colourless	
Odour:		odourless	
pH value			
at 49 g/l H ₂ O	(25 °C)	0.3	
Viscosity dynamic	(20 °C)	26.9	mPa*s
Melting point		~ -15	°C
Boiling point		~ 310	°C
Ignition temperature		not applicable	
Flash point		not applicable	
Explosion limits	lower	not applicable	
	upper	not applicable	
Vapour pressure	(20 °C)	~ 0.0001	hPa
Relative vapour density		~ 3.4	
Density	(20 °C)	1.84	g/cm ³
Solubility in			
water	(20 °C)	soluble (caution ! development	
		of heat)	
Thermal decomposition		~ 338	°C

10. Stability and reactivity

Conditions to be avoided

Strong heating.

Substances to be avoided

water, alkali metals, alkali compounds, ammonia, alkaline earth metals, alkalis, acids, alkaline earth compounds, metals, metal alloys, phosphorus oxides, phosphorus, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvents, acetylidene, nitriles, organic nitro compounds, anilines, peroxides, picrates, nitrides, lithium silicide.

Hazardous decomposition products

in the event of fire: See chapter 5.

Further information

hygroscopic; has a corrosive effect;
incompatible with metals, animal/vegetable tissues.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Küvettenreagenz

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 510 mg/m³ /2 h (calculated on the pure substance).
LD₅₀ (oral, rat): 2140 mg/kg (Using 25 % solution).

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Toxicologic values are not available due to other dangerous properties of the substance.

Subacute to chronic toxicity

Applicable to partial component(s):

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

Further toxicological information

Property that must be anticipated on the basis from the components of the preparation:

After inhalation of aerosols: damage to the affected mucous membranes.

After skin contact: severe burns with formation of scabs.

After eye contact: burns, corneal lesions.

After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhoea.

After a latency period of several weeks possibly pyloric stenosis.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Behavior in environmental compartments:

Concentration in organisms is not to be expected.

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

The following applies to sulfuric acid: biological effects: harmful effect on aquatic organisms.

Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form.

Does not cause biological oxygen deficit. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC₅₀: 29 mg/l/24 h (calculated on the pure substance).

Do not allow to enter waters, waste water, or soil!

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests Spectroquant® Küvettenreagenz

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, II
Ems F-A S-P

Air CAO, PAX
CHEMICAL KIT, 9, UN 3316, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol:	C	Corrosive
R-phrases:	35	Causes severe burns.
S-phrases:	26-30-45	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Never add water to this product. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.:	231-639-5	EC label
contains:	Sulphuric acid	

German regulations

Water pollution class 1 (slightly polluting substance) VwVwS Anh. 2 KennNr. 182

Storage class VCI 8 B

Data sheet of the Chemical Professional Association M004 Irritant substances/corrosive substances
M051 Dangerous chemical substances

The employment restrictions for young workers in accordance with section 22 of the Youth Employment Protection Law (JArbSchG) are to be observed.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Küvettenreagenz

16. Other information

Text of any R phrases referred to under heading 2:

35 Causes severe burns.

Reason for alteration

Chapter 14: transport information.

General update.

Contact for information:

HSSE-C/CI * Tel: +49 (0)6151/722775 * Fax: +49 (0)6151/726433 * e-mail:prodsafe@merck.de

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

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 23.04.2004
Supersedes edition of 09.12.1999

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N
25 Tests Spectroquant®
Blindwertreagenz

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Tel: +49 (0)6151/72-0
Emergency telephone No.: +49 (0)6151/72112 * Fax: +49 (0)6151/72-7780

2. Composition/information on ingredients

Aqueous solution of organic compounds.

3. Hazards identification

No hazardous product as specified in Directive 67/548/EEC.

4. 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 with the eyelid held wide open.
After swallowing (large amounts): consult doctor if feeling unwell.

5. Fire-fighting measures

Suitable extinguishing media:
In adaption to materials stored in the immediate neighbourhood.

Special risks:
Non-combustible.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols.

Procedures for cleaning / absorption:
Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Blindwertreagenz

7. Handling and storage

Handling:

No further requirements.

Storage:

Tightly closed. At +15°C to +25°C.

The data apply to the entire pack.

8. Exposure controls/personal protection

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required

Eye protection: required

Hand protection: In full contact:

Glove material:	nitrile rubber
Layer thickness:	0.11 mm
Breakthrough time:	> 480 Min.

In splash contact:

Glove material:	nitrile rubber
Layer thickness:	0.11 mm
Breakthrough time:	> 480 Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 740 Dermatril® (full contact), 740 Dermatril® (splash contact).

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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).

Industrial hygiene:
Wash hands after working with substance.

9. Physical and chemical properties

Form:	liquid	
Colour:	red	
Odour:	odourless	
pH value	(20 °C)	~ 4
Melting point		not available
Boiling point		not available

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Blindwertreagenz

Ignition temperature		not available
Flash point		not available
Explosion limits	lower	not available
	upper	not available
Density	(20 °C)	1.00 g/cm ³
Solubility in water	(25 °C)	soluble

10. Stability and reactivity

Conditions to be avoided

none

Substances to be avoided

The generally known reaction partners of water.

Hazardous decomposition products

none

11. Toxicological information

Acute toxicity

Quantitative data on the toxicity of this product are not available.

Further toxicological information

Due to the low concentration of the components contained in this product, risks are relatively improbable.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Ecotoxic effects:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

No ecological problems are to be expected when the product is handled and used with due care and attention.

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 114537
Product name: Nitrogen (total) Cell Test Method: photometric 0.5 - 15.0 mg/l N 25 Tests
Spectroquant®
Blindwertreagenz

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 3316 CHEMIE-TESTSATZ, 9, II
Inland waterway ADN, ADNR not tested
Sea IMDG-Code
UN 3316 CHEMICAL KIT, 9, II
Ems F-A S-P
Air CAO, PAX
CHEMICAL KIT, 9, UN 3316, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.
THESE TRANSPORT DATA APPLY TO THE ENTIRE PACK !

15. Regulatory information

Labelling according to EC Directives

Symbol: ---
R-phrases: ---
S-phrases: ---

German regulations

Water pollution class nwg (nonpolluting substance) VwVwS Anh. 4
Storage class VCI 10-13

16. Other information

Reason for alteration

Chapter 8: personal protective equipment.
Chapter 14: transport information.

General update.

Contact for information:

HSSE-C/CI * Tel: +49 (0)6151/722775 * Fax: +49 (0)6151/726433 * e-mail: prodsafe@merck.de

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