

## Cyanid-Mischstandard je 10 mg/l als KCN und K4[(CN)6] in Natronlauge 0,4 mol/l

Revision date: 23.04.2024

Product code: 31571

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

## 1.1. Product identifier

Cyanid-Mischstandard je 10 mg/l als KCN und K4[(CN)6] in Natronlauge 0,4 mol/l

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

#### Use of the substance/mixture

#### Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

#### 1.3. Details of the supplier of the safety data sheet

Company name:	AnalytiChem GmbH	
	ACD	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
E-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone:0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	
1.4. Emergency telephone	For Hazardous Materials [or Danger	ous Goods] Incidents Spill, Leak, Fire,
number:	Exposure, or Accident Call CHEMTF	REC Day or Night Within USA and Canada:
	1-800-424-9300 Outside USA and C	Canada: +1 703-741-5970 (collect calls
	accepted)	

## **Further Information**

This product is a mixture. REACH Registration Number see section 3.

## **SECTION 2: Hazards identification**

## 2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008 Met. Corr. 1; H290 Skin Irrit. 2; H315 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

## 2.2. Label elements

Regulation	(EC) No	1272/2008
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Signal word:	Danger
olgilal word.	Dungoi

**Pictograms:** 



#### Hazard statements

H290	
H315	
H318	

May be corrosive to metals. Causes skin irritation. Causes serious eye damage.



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# according to Regulation (EC) No 1907/2006

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Precautionary statemer	Its
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	F ON SKIN: Wash with plenty of 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.
P337+P313	If eye irritation persists: Get medical advice/attention.
P390	Absorb spillage to prevent material damage.
2.3. Other hazards	

No data available

#### **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixtures

## Chemical characterization

Mixtures in aqueous solution

#### **Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation	on (EC) No 1272/2008)		
1310-73-2	3-2 sodium hydroxide			1 - < 5 %
	215-185-5	011-002-00-6	01-2119457892-27	
	Met. Corr. 1, Skin Corr.	1A; H290 H314		
151-50-8	potassium cyanide			< 0.01 %
	205-792-3	006-007-00-5	01-2119486407-29	
	Acute Tox. 1, Acute Tox H310 H300 H372 H400	. 1, Acute Tox. 1, STOT RE 1, Aqua H410 EUH032	ic Acute 1, Aquatic Chronic 1; H330	

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

### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
1310-73-2	215-185-5 sodium hydroxide		1 - < 5 %
	Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2		
151-50-8	205-792-3	potassium cyanide	< 0.01 %
	inhalation: ATE = 0,05 mg/l (vapours); inhalation: ATE = 0,005 mg/l (dusts or mists); inhalation: LC50 = 63 ppm (gases); dermal: LD50 = ca. 11,28 mg/kg; oral: LD50 = >= 7,49 mg/kg Aquatic Chronic 1; H410: M=10		

#### **Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

## **SECTION 4: First aid measures**

## 4.1. Description of first aid measures

## **General information**

Take off immediately all contaminated clothing.

## After inhalation

Provide fresh air.

Call a doctor if you feel unwell.



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#### After contact with skin

Wash immediately with: Water Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately.

#### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. Protect uninjured eye.

#### After ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth immediately and drink plenty of water. Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting. Call a physician immediately.

#### 4.2. Most important symptoms and effects, both acute and delayed

Irritant — skin irritation and eye damage

## 4.3. Indication of any immediate medical attention and special treatment needed

No data available

## **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

#### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

#### Unsuitable extinguishing media

no restriction

## 5.2. Special hazards arising from the substance or mixture

Non-combustible liquids Hazardous combustion products In case of fire may be liberated: Hydrogen cyanide (hydrocyanic acid)

## 5.3. Advice for firefighters

Do not inhale explosion and combustion gases. Avoid contact with skin, eyes and clothes. 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. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers.

#### **SECTION 6:** Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

#### General advice

Corrosive to metals.

## For non-emergency personnel

Provide adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes and clothes. Remove persons to safety. Emergency procedures



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#### Consult an expert

Do not breathe dust/fume/gas/mist/vapours/spray.

## For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

#### 6.3. Methods and material for containment and cleaning up

#### For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

#### For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

#### Other information

Provide adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

#### 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

Read label before use. Handle and open container with care. When using do not eat, drink, smoke, sniff. Keep container tightly closed. Use personal protection equipment. Use extractor hood (laboratory). Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

#### Advice on protection against fire and explosion

Usual measures for fire prevention.

#### Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

#### Further information on handling

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. Take off immediately all contaminated clothing and wash it before reuse.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

#### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed. Corrosive to metals.

## Further information on storage conditions

Store in a dry place.

## 7.3. Specific end use(s)



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Laboratory chemicals

## **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

#### **Occupational exposure limits**

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
151-50-8	Potassium cyanide (as cyanide)	-	1		TWA (8 h)	
		-	5		STEL (15 min)	
1310-73-2	Sodium hydroxide	-	2		STEL (15 min)	

## **DNEL/DMEL** values

CAS No	Substance					
DNEL type	DNEL type Exposure route Effect Value					
1310-73-2	sodium hydroxide					
Worker DNEI	, long-term	inhalation	local	1 mg/m³		
Consumer DI	NEL, long-term	inhalation	local	1 mg/m³		
151-50-8	potassium cyanide					
Worker DNEI	Worker DNEL, long-term inhalation systemic 0,94 mg/m <sup>3</sup>					
Worker DNEL, acute inhalation systemic 12,5 mg/m³						
Worker DNEI	., long-term	dermal	systemic	0,14 mg/kg bw/day		
Worker DNEI	., acute	dermal	systemic	4,03 mg/kg bw/day		

## **PNEC** values

CAS No	Substance				
Environment	Environmental compartment Value				
151-50-8	potassium cyanide				
Freshwater		0,001 mg/l			
Freshwater (	Freshwater (intermittent releases) 0,0032 mg/l				
Marine water 0,0002 mg/l		0,0002 mg/l			
Freshwater sediment 0,004 mg/kg		0,004 mg/kg			
Marine sediment 0,0008 mg/kg		0,0008 mg/kg			
Micro-organisms in sewage treatment plants (STP) 0,05 mg/l		0,05 mg/l			
Soil 0,007 mg/kg					

## 8.2. Exposure controls

#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Do not breathe gas/fumes/vapour/spray.

## Individual protection measures, such as personal protective equipment

#### Eye/face protection

goggles Wear eye protection/face protection.



## Safety Data Sheet

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#### Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

KCL 741 Dermatril® L NBR (Nitrile rubber) 0,11mm Wearing time with permanent contact: >480min

KCL 741 Dermatril® L NBR (Nitrile rubber) 0,11mm Wearing time with occasional contact (splashes): >480min

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).

#### Skin protection

Wear suitable protective clothing.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

#### **Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

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 allow to enter into surface water or drains.

#### **SECTION 9: Physical and chemical properties**

#### 9.1. Information on basic physical and chemical properties

Physical state: Colour: Odour:	Liquid clear odourless	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and		No data available
boiling range:		
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		alkaline
Viscosity / kinematic:		No data available
Water solubility:		No data available
Solubility in other solvents		
No data available		
Partition coefficient n-octanol/water:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available



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Density:	1,015 g/cm³	
Bulk density:	No data available	
Relative vapour density:	No data available	
9.2. Other information		
Information with regard to physical hazard classes	5	
Explosive properties		
No data available		
Sustaining combustion:	No data available	
Self-ignition temperature		
Solid:	No data available	
Gas:	No data available	
Oxidizing properties		
No data available		
Other safety characteristics		
Evaporation rate:	No data available	
Solvent separation test:	No data available	
Solvent content:	0	
Solid content:	0	
Sublimation point:	No data available	
Softening point:	No data available	
Pour point: No data available:	No data available	
	NI 17 711	
Viscosity / dynamic:	No data available	
Flow time:	No data available	
Further Information		
No data available		
SECTION 10: Stability and reactivity		
10.1. Reactivity		

Corrosive to metals.

10.2. Chemical stability

No data available

## 10.3. Possibility of hazardous reactions

Acid

#### 10.4. Conditions to avoid No data available

10.5. Incompatible materials

Metal

The product develops hydrogen in an aqueous solution in contact with metals.

## 10.6. Hazardous decomposition products

In case of fire may be liberated: SECTION 5: Firefighting measures

## Further information

No data available

## **SECTION 11: Toxicological information**

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

#### Acute toxicity

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



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#### ATEmix calculated

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

CAS No	Chemical name						
	Exposure route	Dose		Species	Source	Method	
151-50-8	potassium cyanide						
	oral	LD50 mg/kg	>= 7,49	Rat	Clinical and Experimental Toxicology of	A reputable corporate laboratory	
	dermal	LD50 mg/kg	ca. 11,28	Rabbit	J Toxicol – Cut and Ocular Toxicol 13:24	Animals were exposed to a solution of cy	
	inhalation vapour	ATE	0,05 mg/l				
	inhalation dust/mist	ATE mg/l	0,005				
	inhalation (1 h) gas	LC50	63 ppm	Rat	Study report (1981)	OECD Guideline 403	

#### Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/eye irritation: Causes serious eye damage.

## Sensitising effects

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

#### Carcinogenic/mutagenic/toxic effects for reproduction

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

#### STOT-single exposure

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

#### STOT-repeated exposure

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

#### Aspiration hazard

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

#### Specific effects in experiment on an animal

No data available

#### Additional information on tests

No data available

## Practical experience

No data available

## 11.2. Information on other hazards

Other information

No data available

## Further information

No data available

## **SECTION 12: Ecological information**

#### 12.1. Toxicity



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CAS No	Chemical name							
	Aquatic toxicity	Dose		[h]   [d]	Species	Source	Method	
1310-73-2	sodium hydroxide							
	Acute crustacea toxicity	EC50 mg/l	40,4	48 h	Ceriodaphnia sp.	Ecotoxicology and Environmental Safety,4	other: acute 48-h immobilization test ac	
151-50-8	potassium cyanide							
	Acute fish toxicity	LC50 mg/l	0,1038	96 h	Gasterosteus aculeatus	Study report (2005)	other: ASTM E729-96. Standard Guide for	
	Acute algae toxicity	ErC50 mg/l	0,116	72 h	Pseudokirchneriella subcapitata	Journal of Hazardous Materials 197 (2011	ISO 8692	
	Acute crustacea toxicity	EC50 mg/l	0,21638	48 h	other aquatic crustacea: Acartia tonsa	Study report (2006)	other: ASTM E 729-96: Standard Guide for	
	Algae toxicity	NOEC	0,1 mg/l	10 d	Chlamydomonas sp.	Bulletin 106. Virginia Water resources R	Bartsch, A.F. 1971. Algal Assay Procedur	
	Acute bacteria toxicity	EC50 ()	2,3 mg/l	0,5 h	activated sludge, domestic	Acta hydrochim. hydrobiol. 20, 3 (1992)	EU Method C.11	

## 12.2. Persistence and degradability

No data available

## 12.3. Bioaccumulative potential

## No data available

## BCF

CAS No	Chemical name	BCF	Species	Source
151-50-8	potassium cyanide	3,162		United States Enviro

## 12.4. Mobility in soil

No data available

## 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII. No data available

## 12.6. Endocrine disrupting properties

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

#### **Further information**

Do not allow to enter into surface water or drains. Discharge into the environment must be avoided.

## **SECTION 13: Disposal considerations**

## 13.1. Waste treatment methods

#### Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Dispose of waste according to applicable legislation. Do not allow to enter into surface water or drains.



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#### Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

## **SECTION 14: Transport information**

### Land transport (ADR/RID)

<u>14.1. UN number or ID number:</u>	UN 1824
14.2. UN proper shipping name:	SODIUM HYDROXIDE SOLUTION
<u>14.3. Transport hazard class(es):</u>	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C5
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 1824
14.2. UN proper shipping name:	SODIUM HYDROXIDE SOLUTION
14.3. Transport hazard class(es):	8
14.4. Packing group:	jii
Hazard label:	8
Classification code:	C5
Limited quantity:	5 L
Excepted quantity:	E1
Marine transport (IMDG) 14.1. UN number or ID number:	UN 1824
14.2. UN proper shipping name:	SODIUM HYDROXIDE, SOLUTION
14.3. Transport hazard class(es):	8
14.4. Packing group:	
Hazard label:	8
Special Provisions:	223
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-B
Air transport (ICAO-TI/IATA-DGR)	
<u>14.1. UN number or ID number:</u>	UN 1824
14.2. UN proper shipping name:	SODIUM HYDROXIDE, SOLUTION
14.3. Transport hazard class(es):	8
14.4. Packing group:	111
Hazard label:	8
Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
Passenger LQ:	Y841
Excepted quantity:	E1
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L
14.5. Environmental hazards	



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ENVIRONMENTALLY HAZARDOUS: No

## SECTION 15: Regulatory information

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

#### EU regulatory information

Restrictions on use (REACH, annex XVII): Entry 3, Entry 75

#### National regulatory information

Water hazard class (D):

1 - slightly hazardous to water

#### **SECTION 16: Other information**

## Abbreviations and acronyms

Met. Corr: Substance or mixture corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage STOT RE: Specific target organ toxicity - repeated exposure Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

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

Classification	Classification procedure	
Met. Corr. 1; H290	On basis of test data	
Skin Irrit. 2; H315	Calculation method	
Eye Dam. 1; H318		

#### Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

#### **Further Information**

Provide appropriate information, instructions and training to users

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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