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

1.1. Product identifier

Aceton-Standardlösung 10 g/l in n-Butanol

UFI: 5ECY-U250-M00C-SSKX

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 number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and 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

Flam. Liq. 3; H226
Acute Tox. 4; H302
Skin Irrit. 2; H315
Eye Dam. 1; H318
STOT SE 3; H335
STOT SE 3; H336

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

butanol
acetone

Signal word: Danger

Pictograms:

Hazard statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P403+P235	Store in a well-ventilated place. Keep cool.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
71-36-3	butanol			95 - < 100 %
	200-751-6	603-004-00-6	01-2119484630-38	
	Flam. Liq. 3, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, STOT SE 3, STOT SE 3; H226 H302 H315 H318 H335 H336			
67-64-1	acetone			1 - < 5 %
	200-662-2	606-001-00-8	01-2119471330-49	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			

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		
71-36-3	200-751-6	butanol	95 - < 100 %
	dermal: LD50 = ca. 3430 mg/kg; oral: LD50 = ca. 2292 mg/kg		
67-64-1	200-662-2	acetone	1 - < 5 %
	dermal: LD50 = > 7426 mg/kg; oral: LD50 = 5800 mg/kg		

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

Remove contaminated, saturated clothing immediately.

After inhalation

Provide fresh air.
Call a physician immediately.

After contact with skin

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

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.

After ingestion

Observe risk of aspiration if vomiting occurs.
Call a physician immediately.

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

Risk of serious damage to eyes.
Irritant
corrosive
Vapours may cause drowsiness and dizziness.
Cough
Dyspnoea
Cardiac arrhythmias
Circulatory collapse
Vomiting
Inebriation
Dizziness
Anaesthetic state
Respiratory complaints

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

Carbon dioxide (CO2)
Foam
Extinguishing powder

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids
Hazardous combustion products
In case of fire may be liberated: Carbon dioxide (CO2), Carbon monoxide
In case of warming:
Vapours are heavier than air, spread along floors and form explosive mixtures with air.
Heating causes rise in pressure with risk of bursting.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

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

Keep away from sources of ignition - No smoking.
This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).
Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
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.
The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.
Danger of explosion

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).
Do not breathe vapour/aerosol. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.
Wash hands and face before breaks and after work and take a shower if necessary.
When using do not eat or drink.
Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. 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

Keep container tightly closed in a cool, well-ventilated place.
Store in a cool dry place.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Further information on storage conditions

Protect from sunlight.

7.3. Specific end use(s)

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
67-64-1	Acetone	500	1210		TWA (8 h)	
71-36-3	Butan-1-ol	20	-		TWA (8 h)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
67-64-1	Acetone	Acetone	50 mg/L	Urine	End of shift

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
71-36-3	butanol			
Worker DNEL, long-term		inhalation	local	310 mg/m³
Consumer DNEL, long-term		inhalation	systemic	55,357 mg/m³
Consumer DNEL, long-term		inhalation	local	155 mg/m³
Consumer DNEL, long-term		dermal	systemic	3,125 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	1,562 mg/kg bw/day
67-64-1	acetone			
Worker DNEL, long-term		inhalation	systemic	1210 mg/m³
Worker DNEL, acute		inhalation	local	2420 mg/m³
Worker DNEL, long-term		dermal	systemic	186 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	200 mg/m³
Consumer DNEL, long-term		dermal	systemic	62 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	62 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
71-36-3	butanol	
Freshwater		0,082 mg/l
Freshwater (intermittent releases)		2,25 mg/l
Marine water		0,008 mg/l
Freshwater sediment		0,324 mg/kg
Marine sediment		0,032 mg/kg
Micro-organisms in sewage treatment plants (STP)		2476 mg/l
Soil		0,017 mg/kg
67-64-1	acetone	
Freshwater		10,6 mg/l
Freshwater (intermittent releases)		21 mg/l
Marine water		1,06 mg/l
Freshwater sediment		30,4 mg/kg
Marine sediment		3,04 mg/kg
Micro-organisms in sewage treatment plants (STP)		100 mg/l
Soil		29,5 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.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Face protection umbrella

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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

By long-term hand contact
Trade name/designation KCL 730 Camatril® Velours
Suitable material: NBR (Nitrile rubber) 0,4 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation KCL 720 Camapren®
Suitable material: CR (polychloroprene, chloroprene rubber) 0,65 mm
Wearing time with occasional contact (splashes): > 120 min

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 fire resistant or flame retardant clothing.
Take off immediately all contaminated clothing and wash it before reuse.
Wear suitable protective clothing. Take off immediately all contaminated clothing.
Wash hands and face before breaks and after work and take a shower if necessary.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Environmental exposure controls

Do not allow to enter into surface water or drains.
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.
Danger of explosion

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:	colourless	
Odour:	like: Alcohol	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		~119 °C
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		~35 °C
Auto-ignition temperature:		No data available

Decomposition temperature:	No data available
pH-Value:	4,0
Viscosity / kinematic:	No data available
Water solubility:	No data available
(at 20 °C)	

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
Density:	0,8099 g/cm³
Bulk density:	No data available
Relative vapour density:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

In case of warming:

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion:	Sustaining combustion

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:	100%
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
	No data available
Viscosity / dynamic:	No data available
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming:

Vapours may form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent
Alkali metals
Alkaline earth metal,
Acid chlorides, inorganic
Reducing agent
Aluminium

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Rubber articles
Plastic articles

10.6. Hazardous decomposition products

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

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

Harmful if swallowed.

ATEmix calculated

ATE (oral) 506,2 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
71-36-3	butanol				
	oral	LD50 ca. 2292 mg/kg	Rat	Study report (1967)	OECD Guideline 401
	dermal	LD50 ca. 3430 mg/kg	Rabbit	Study report (1951)	OECD Guideline 402
67-64-1	acetone				
	oral	LD50 5800 mg/kg	Rat	J Toxicol Environ Health 15: 609-621 (19	Undiluted acetone applied to female rats
	dermal	LD50 > 7426 mg/kg	Rabbit	Toxicol Appl Pharmacol 7: 559-565. (1965	other: Code of federal regulations: 21 C

Irritation and corrosivity

Causes skin irritation.
Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (butanol)
May cause drowsiness or dizziness. (butanol)

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

There are no data available on the mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Other information

Vomiting
Observe risk of aspiration if vomiting occurs.
Liver and kidney damage

Further information

Risk of serious damage to eyes.
Irritant
corrosive
Vapours may cause drowsiness and dizziness.
Cough
Dyspnoea
Cardiac arrhythmias
Circulatory collapse
Vomiting
Inebriation
Dizziness
Anaesthetic state
Respiratory complaints

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
71-36-3	butanol						
	Acute fish toxicity	LC50 mg/l	1376	96 h	Pimephales promelas	Study report (1998)	OECD Guideline 203
	Acute algae toxicity	ErC50	225 mg/l	96 h	Pseudokirchneriella subcapitata	Study report (1998)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	1328	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Crustacea toxicity	NOEC	4,1 mg/l	21 d	Daphnia magna	Study report (1996)	OECD Guideline 211
67-64-1	acetone						
	Acute fish toxicity	LC50 mg/l	8120	96 h	Pimephales promelas	Publication (1984)	OECD Guideline 203
	Acute crustacea toxicity	EC50 mg/l	8800	48 h	Daphnia pulex	Publication (1978)	The toxicity of acetone towards daphnids
	Crustacea toxicity	NOEC mg/l	2212	28 d	Daphnia magna	Arch Environm Contam Toxicol 12: 305-310	Study conducted comparable to OECD 211 w
	Acute bacteria toxicity	EC50 mg/l ( )	61150	0,5 h	activated sludge of a predominantly domestic sewag	Water Res 26: 887-892 (1992)	ISO 8192

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
71-36-3	butanol	10
67-64-1	acetone	-0,23

BCF

CAS No	Chemical name	BCF	Species	Source
71-36-3	butanol	3,16		QSAR (2017)
67-64-1	acetone	3		Unpublished calculat

12.4. Mobility in soil

There are no data available on the mixture itself.

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.
There are no data available on the mixture itself.

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.

12.7. Other adverse effects

Avoid release to the environment.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not allow to enter into surface water or drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1120
14.2. UN proper shipping name:	BUTANOLS
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3
Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	30
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1120
14.2. UN proper shipping name:	BUTANOLS
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3
Classification code:	F1
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1120
14.2. UN proper shipping name:	BUTANOLS
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3
Special Provisions:	223
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1120
14.2. UN proper shipping name:	BUTANOLS
14.3. Transport hazard class(es):	3
14.4. Packing group:	III
Hazard label:	3
Special Provisions:	A3
Limited quantity Passenger:	10 L
Passenger LQ:	Y344
Excepted quantity:	E1

IATA-packing instructions - Passenger:	355
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	366
IATA-max. quantity - Cargo:	220 L

14.5. Environmental hazards

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 40

Information according to Directive 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

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

Abbreviations and acronyms

Flam. Liq: Flammable liquid
Acute Tox: Acute toxicity
Skin Irrit: Skin irritation
Eye Dam: Eye damage
Eye Irrit: Eye irritation
STOT SE: Specific target organ toxicity - single exposure

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

Classification	Classification procedure
Flam. Liq. 3; H226	On basis of test data
Acute Tox. 4; H302	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
STOT SE 3; H335	Calculation method
STOT SE 3; H336	Calculation method

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The 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.)