

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### HF/HCl-Mischung 2 5 % HF / 13 % HCl

Revision date: 31.08.2023

Product code: 32900

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

### 1.1. Product identifier

HF/HCl-Mischung 2 5 % HF / 13 % HCl

### 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	
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

Met. Corr. 1; H290

Acute Tox. 2; H310

Acute Tox. 3; H301

Acute Tox. 3; H331

Skin Corr. 1B; H314

Eye Dam. 1; H318

STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

#### Hazard components for labelling

Hydrochloric acid

Hydrofluoric acid ... %

Signal word: Danger

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**Pictograms:**



**Hazard statements**

- H290 May be corrosive to metals.
- H301+H331 Toxic if swallowed or if inhaled.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H335 May cause respiratory irritation.

**Precautionary statements**

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 IF exposed or concerned:
- P310 Immediately call a POISON CENTER/doctor.

**Additional advice on labelling**

No information available.

**2.3. Other hazards**

No data available

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

**3.2. Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7647-01-0	Hydrochloric acid			10 - < 15 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Skin Corr. 1B, STOT SE 3; H314 H335			
7664-39-3	Hydrofluoric acid ... %			5 - < 10 %
	231-634-8	009-003-00-1	01-2119458860-33	
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Skin Corr. 1A; H310 H330 H300 H314			

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

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

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
7647-01-0	231-595-7	Hydrochloric acid	10 - < 15 %
	Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100		
7664-39-3	231-634-8	Hydrofluoric acid ... %	5 - < 10 %
	inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: LC50 = 1610 ppm (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg Skin Corr. 1A; H314: >= 7 - 100 Skin Corr. 1B; H314: >= 1 - < 7 Eye Irrit. 2; H319: >= 0,1 - < 1		

**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**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Call a physician immediately.

**After inhalation**

Provide fresh air.  
If breathing is irregular or stopped, administer artificial respiration.  
Call a physician immediately.

**After contact with skin**

Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required!

**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.  
Adverse human health effects and symptoms:  
Gastric perforation  
Remove casualty to fresh air and keep warm and at rest.  
Call a physician immediately.

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

Irritant  
Causes burns.  
Cough  
Dyspnoea  
Risk of serious damage to eyes.  
Gastric perforation  
Circulatory collapse  
Pulmonary oedema  
Vomiting  
seizures

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Pneumonia

## 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 fluoride, Hydrogen chloride (HCl)

### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

In case of fire and/or explosion do not breathe fumes. Use water spray jet to protect personnel and to cool endangered containers.

#### 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.

## 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

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

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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**

Avoid exposure - obtain special instructions before use.  
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**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.  
storage temperature +5°C - +30°C

**Further information on storage conditions**

Store in a dry place.  
Suitable container/equipment material: plastic  
Unsuitable container/equipment material: Metal, Glass

**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/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
7647-01-0	Hydrogen chloride	5	8		TWA (8 h)	
		10	15		STEL (15 min)	
7664-39-3	Hydrogen fluoride (as F)	1.8	1.5		TWA (8 h)	
		3	2.5		STEL (15 min)	

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**Biological limit values**

CAS No	Substance	Parameter	Value	Test material	Sampling time
7664-39-3	Hydrogen fluoride	Fluoride	3 mg/L	Urine	End of shift

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
7647-01-0	Hydrochloric acid			
Worker DNEL, long-term		inhalation	local	8 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	15 mg/m <sup>3</sup>
Consumer DNEL, long-term		inhalation	local	8 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	local	15 mg/m <sup>3</sup>

**8.2. Exposure controls**

**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.  
Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection:  
goggles  
Face protection umbrella

**Hand protection**

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

Wearing time with permanent contact  
Trade name/designation: KCL 720 Camapren®  
Recommended material: CR (polychloroprene, chloroprene rubber)  
Thickness of the glove material 0,65 mm  
Wearing time with permanent contact > 480 min

Wearing time with occasional contact (splashes):  
Trade name/designation: KCL 720 Camapren®  
Recommended material: CR (polychloroprene, chloroprene rubber)  
Thickness of the glove material 0,65 mm  
Wearing time with occasional contact (splashes): > 480 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](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing.  
Take off immediately all contaminated clothing.  
Wash hands before breaks and after work.

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**Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation

**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:	Liquid	
Colour:	colourless	
Odour:	stinging	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		No data available
Flammability:		not applicable
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		X
Auto-ignition temperature:		No data available
Decomposition temperature:		not determined
pH-Value:		acidic
Viscosity / kinematic:		not determined
Water solubility:		Soluble in: Water
Solubility in other solvents		not determined
Partition coefficient n-octanol/water:		not determined
Vapour pressure:		not determined
Vapour pressure:		not determined
Density:		~1,07 g/cm <sup>3</sup>
Bulk density:		No data available
Relative vapour density:		not determined

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties		
No data available		
Self-ignition temperature		
Solid:		not applicable
Gas:		not applicable
Oxidizing properties		
Not oxidising.		

**Other safety characteristics**

Evaporation rate:		not determined
Solvent separation test:		No data available
Solvent content:		No data available
Solid content:		not determined
Sublimation point:		No data available
Softening point:		No data available
Pour point:		No data available
No data available:		
Viscosity / dynamic:		not determined
Flow time:		not determined

**Further Information**

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No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.4. Conditions to avoid

Radiant heat.

### 10.5. Incompatible materials

Metal

Glass

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

### 10.6. Hazardous decomposition products

In case of fire:

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

#### Toxicokinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

#### Acute toxicity

Fatal in contact with skin.

Toxic if swallowed.

Toxic if inhaled.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Causes poorly healing wounds.

Irritant

Causes burns.

Cough

Dyspnoea

Risk of serious damage to eyes.

Gastric perforation

Circulatory collapse

Pulmonary oedema

Vomiting

seizures

Pneumonia

#### ATEmix calculated

ATE (oral) 100,0 mg/kg; ATE (dermal) 100,0 mg/kg; ATE (inhalation vapour) 10,00 mg/l; ATE (inhalation dust/mist) 1,000 mg/l



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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7664-39-3	Hydrofluoric acid ... %				
	oral	ATE 5 mg/kg			
	dermal	ATE 5 mg/kg			
	inhalation vapour	ATE 0,5 mg/l			
	inhalation dust/mist	ATE 0,05 mg/l			
	inhalation (1 h) gas	LC50 1610 ppm	Rat		

**Irritation and corrosivity**

Causes severe skin burns and eye damage.  
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. (Hydrochloric acid)

**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.  
No data available

**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**

Following ingestion gastric perforation  
Liver and kidney damage  
Risk of serious damage to eyes.

**SECTION 12: Ecological information**

**12.1. Toxicity**

No information available.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7647-01-0	Hydrochloric acid					
	Acute fish toxicity	LC50 862 mg/l	96 h	Leuciscus idus		

**12.2. Persistence and degradability**

No information available.

**12.3. Bioaccumulative potential**

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No information available.

#### **12.4. Mobility in soil**

No information 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.

#### **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**

No information available.

#### **Further information**

Avoid release to the environment.

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

### SECTION 13: Disposal considerations

#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Dispose of waste according to applicable legislation.

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not allow to enter into surface water or drains.

##### **Contaminated packaging**

This material and its container must be disposed of as hazardous waste.

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)**

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, Hydrochloric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E

#### **Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, Hydrochloric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274 802

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Limited quantity: 1 L  
Excepted quantity: E2

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 2922  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, Hydrochloric acid)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8+6.1  
Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2  
EmS: F-A, S-B

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID number:** UN 2922  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, Hydrochloric acid)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8+6.1  
Special Provisions: A3 A803  
Limited quantity Passenger: 0.5 L  
Passenger LQ: Y840  
Excepted quantity: E2  
IATA-packing instructions - Passenger: 851  
IATA-max. quantity - Passenger: 1 L  
IATA-packing instructions - Cargo: 855  
IATA-max. quantity - Cargo: 30 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: Toxic. strongly corrosive.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**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

Information according to 2012/18/EU (SEVESO III): H2 ACUTE TOXIC

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning.

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**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information**

**Changes**

This data sheet contains changes from the previous version in section(s): 9,12.

**Abbreviations and acronyms**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service
- LC50: Lethal concentration, 50%
- LD50: Lethal dose, 50%
- Met. Corr: Substance or mixture corrosive to metals
- Acute Tox: Acute toxicity
- Skin Corr: Skin corrosion
- Eye Dam: Eye damage
- 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
Met. Corr. 1; H290	On basis of test data
Acute Tox. 2; H310	Calculation method
Acute Tox. 3; H301	Calculation method
Acute Tox. 3; H331	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
STOT SE 3; H335	Calculation method

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

- H290 May be corrosive to metals.
- H300 Fatal if swallowed.
- H301 Toxic if swallowed.
- H301+H331 Toxic if swallowed or if inhaled.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.

**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.

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