

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### hydrochloric acid 0.2 mol/l in pyridine

Revision date: 29.10.2021

Product code: 05153

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

##### 1.1. Product identifier

hydrochloric acid 0.2 mol/l in pyridine

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

###### Use of the substance/mixture

Laboratory chemical

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:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.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

Flam. Liq. 2; H225

Acute Tox. 4; H302

Acute Tox. 4; H312

Acute Tox. 4; H332

Skin Irrit. 2; H315

Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

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

###### Hazard components for labelling

pyridine

Signal word: Danger

###### Pictograms:



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**Hazard statements**

H225	Highly flammable liquid and vapour.
H290	May be corrosive to metals.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

**Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P302+P352	IF ON SKIN: Wash with plenty of soap and 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.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

**2.3. Other hazards**

No information available.

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

**3.2. Mixtures**

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
110-86-1	pyridine			95 - < 100 %
	203-809-9	613-002-00-7	01-2119493105-40	
	Flam. Liq. 2, Acute Tox. 4, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2; H225 H332 H312 H302 H315 H319			

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		
110-86-1	203-809-9	pyridine	95 - < 100 %
	inhalation: LC50 = 4900 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = > 1000 - < 2000 mg/kg; oral: LD50 = > 800 - < 1600 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**

No data available

**After inhalation**

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

**After contact with skin**

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

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Call a physician immediately.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

Dyspnoea

Cough

Anaesthetic state

Gastrointestinal complaints

Vomiting

Cardiac arrhythmias / Circulatory collapse

Headache

**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**

Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.

**Unsuitable extinguishing media**

no restriction

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

Combustible liquid.

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

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NO<sub>x</sub>)

Hydrogen chloride (HCl)

Beware of reignition.

**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**

Danger of bursting container.

Use water spray jet to protect personnel and to cool endangered containers.

Suppress gases/vapours/mists with water spray jet.

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**

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).

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Take action to prevent static discharges.  
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.  
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 gas/fumes/vapour/spray. Provide adequate ventilation.

**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.  
Vapours can form explosive mixtures with air.

**Advice on general occupational hygiene**

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**

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.

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

**Further information on storage conditions**

Keep cool. Protect from sunlight.  
storage temperature: +5°C - +30°C  
Unsuitable container/equipment material: Metal  
Corrosive to metals.

**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
110-86-1	Pyridine	5	15		TWA (8 h)	
		10	30		STEL (15 min)	

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
110-86-1	pyridine			
Consumer DNEL, long-term		oral	systemic	0,07 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	7,5 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	0,14 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	0,42 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,6 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	0,07 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	2,5 mg/m <sup>3</sup>

**PNEC values**

CAS No	Substance	Value
110-86-1	pyridine	
Freshwater		0,3 mg/l
Freshwater (intermittent releases)		3 mg/l
Marine water		0,03 mg/l
Freshwater sediment		3,2 mg/kg
Marine sediment		0,32 mg/kg
Micro-organisms in sewage treatment plants (STP)		2 mg/l
Soil		0,46 mg/kg

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**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**

Suitable eye protection: goggles.

**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):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation: KCL 898 Butoject®

Suitable material: Butyl caoutchouc (butyl rubber) 0,7 mm

Wearing time with occasional contact (splashes): > 240 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**

Flame-retardant protective clothing. Wear anti-static footwear and clothing

**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:	pungent
Odour threshold:	There are no data available on the mixture itself.

**Test method**

**Changes in the physical state**

Melting point/freezing point:	No data available
Boiling point or initial boiling point and boiling range:	~ 115 °C
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
No data available:	
Flash point:	~ 17 °C

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**Flammability**

Solid/liquid: not applicable  
Gas: not applicable

**Explosive properties**

No data available

Lower explosion limits: ~ 1,7 vol. %

Upper explosion limits: ~ 10,6 vol. %

Auto-ignition temperature: ~ 482 °C

**Self-ignition temperature**

900°C

Solid: not applicable  
Gas: not applicable

Decomposition temperature: No data available

pH-Value: No data available

Viscosity / dynamic: No data available

Viscosity / kinematic: No data available

Flow time: No data available

Water solubility: No data available

**Solubility in other solvents**

not determined

Dissolution rate: There are no data available on the mixture itself.

Partition coefficient n-octanol/water: No data available

Dispersion stability: There are no data available on the mixture itself.

Vapour pressure: No data available

Vapour pressure: No data available

Density: 0,994 g/cm<sup>3</sup>

Relative density: There are no data available on the mixture itself.

Bulk density: No data available

Relative vapour density: not determined

Particle characteristics: There are no data available on the mixture itself.

**9.2. Other information**

**Information with regard to physical hazard classes**

Sustaining combustion: No data available

Oxidizing properties  
Not oxidising.

**Other safety characteristics**

Solvent separation test: No data available

Solvent content: No data available

Solid content: No data available

Evaporation rate: not determined

**Further Information**

Corrosive to metals.

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**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Vapours may form explosive mixtures with air.  
Corrosive to metals.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Danger of explosion: Nitrogen oxides (NOx), perchloric acid  
Exothermic reaction with: Fluorine, sulphuric acid, silver perchlorate  
Ignition hazard: Oxidising agent, Nitric acid  
chromium trioxide, acid anhydride, perchromates, oleum

**10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

**10.5. Incompatible materials**

Plastic articles  
Rubber articles  
Metal 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**

**Toxicokinetics, metabolism and distribution**

There are no data available on the mixture itself.

**Acute toxicity**

Harmful if swallowed.  
Harmful in contact with skin.  
Harmful if inhaled.

**ATEmix calculated**

ATE (oral) 510,1 mg/kg; ATE (dermal) 1122,2 mg/kg; ATE (inhalation vapour) 11,22 mg/l; ATE (inhalation dust/mist) 1,530 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
110-86-1	pyridine				
	oral	LD50 > 800 - < 1600 mg/kg	Rat	Study report (1978)	Precedes establishment of guideline and
	dermal	LD50 > 1000 - < 2000 mg/kg	Rabbit	Study report (1973)	OECD Guideline 402
	inhalation (4 h) vapour	LC50 4900 mg/l	Rat	Other company data (1984)	EPA OPPTS 870.1300
	inhalation dust/mist	ATE 1,5 mg/l			

**Irritation and corrosivity**



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Causes skin irritation.

Causes serious eye irritation.

**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**

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.

**Information on likely routes of exposure**

There are no data available on the mixture itself.

**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**

**Endocrine disrupting properties**

There are no data available on the mixture itself.

**Other information**

Liver and kidney damage

**Further information**

Irritant

Dyspnoea

Cough

Anaesthetic state

Gastrointestinal complaints

Vomiting

Cardiac arrhythmias / Circulatory collapse

Headache

**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
110-86-1	pyridine					
	Acute fish toxicity	LC50 > 560 - < 1000 mg/l	96 h	Danio rerio	Study report (1991)	OECD Guideline 203
	Acute algae toxicity	ErC50 320 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1991)	OECD Guideline 201

**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.

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**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
110-86-1	pyridine	0,64

**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.

There are no data available on the mixture itself.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not empty into 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 empty into drains.

**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)**

<b>14.1. UN number or ID number:</b>	UN 2924
<b>14.2. UN proper shipping name:</b>	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (pyridine, Hydrochloric acid)
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3+8
Classification code:	FC
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	338
Tunnel restriction code:	D/E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 2924
<b>14.2. UN proper shipping name:</b>	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (pyridine, Hydrochloric acid)
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3+8
Classification code:	FC

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Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 2924  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (pyridine, Hydrochloric acid)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3+8  
 Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-E, S-C

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

**14.1. UN number or ID number:** UN 2924  
**14.2. UN proper shipping name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S. (pyridine, Hydrochloric acid)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3+8  
 Special Provisions: A3  
 Limited quantity Passenger: 0.5 L  
 Passenger LQ: Y340  
 Excepted quantity: E2  
 IATA-packing instructions - Passenger: 352  
 IATA-max. quantity - Passenger: 1 L  
 IATA-packing instructions - Cargo: 363  
 IATA-max. quantity - Cargo: 5 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: Combustible liquid.

**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 40

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

**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.

**SECTION 16: Other information**

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**Changes**

This data sheet contains changes from the previous version in section(s): 1,9,11,12.

**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%

**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
Flam. Liq. 2; H225	On basis of test data
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H312	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

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

H225 Highly flammable liquid and vapour.  
H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.

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