

Safety Data Sheet

according to UK REACH Regulation

Multielement-Standardlösung Barium MES

Revision date: 12.12.2023 Product code: 16940 Page 1 of 13

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

1.1. Product identifier

Multielement-Standardlösung Barium MES

UFI: GDWG-415T-U00C-F2W3

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 For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,

<u>number:</u> 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

inapplicable, this product is a mixture REACH registration number see section 3

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Met. Corr. 1; H290

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Signal word: Warning

Pictograms:



Hazard statements

H290 May be corrosive to metals.

Precautionary statements

P234 Keep only in original packaging.

P390 Absorb spillage to prevent material damage.

P406 Store in a corrosion-resistant container with a resistant inner liner.



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Special labelling of certain mixtures

EUH208 Contains nickel dichloride. May produce an allergic reaction.

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				
	EC No	Index No	REACH No		
	Classification (GB CLP Regulation)	•		
7647-01-0	Hydrochloric acid			1 - < 5 %	
	231-595-7	017-002-01-X	01-2119484862-27		
	Skin Corr. 1B, STOT SE 3; H314 F	1335			
7697-37-2	nitric acid		< 1 %		
	231-714-2	007-030-00-3	01-2119487297-23		
	Ox. Liq. 3, Met. Corr. 1, Acute Tox.	H314 EUH071			
13138-45-9	nickel dinitrate			< 0.01 %	
	236-068-5	028-012-00-1	01-2119492333-38		
		T. 1B, Acute Tox. 4, Acute Tox. 4, Sk FRE 1, Aquatic Acute 1, Aquatic Ch 34 H317 H372 H400 H410			

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. I	Limits, M-factors and ATE		
7647-01-0	231-595-7	Hydrochloric acid	1 - < 5 %	
	1	H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 3; H335: >= 10 - 100		
7697-37-2	231-714-2	nitric acid	< 1 %	
	inhalation: ATE 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20			
13138-45-9	236-068-5	nickel dinitrate	< 0.01 %	
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = 361,9 mg/kg Skin Irrit. 2; H315: >= 20 - 100 Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=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

No data available



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After inhalation

Provide fresh air.

Call a doctor if you feel unwell.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

In case of skin irritation, consult a physician.

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

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

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:

Hydrochloric gas

5.3. Advice for firefighters

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

Avoid contact with skin, eyes and clothes.

Additional information

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

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



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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 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

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

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

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.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.

Hints on joint storage

national regulations

Further information on storage conditions

Unsuitable container/equipment material: Metal storage temperature: +15°C - +25°C

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters



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Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7647-01-0	Hydrogen chloride (gas and aerosol mists)	1	2		TWA (8 h)	WEL
		5	8		STEL (15 min)	WEL
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
7647-01-0	Hydrochloric acid			
Worker DNEL,	long-term	inhalation	local	8 mg/m³
Worker DNEL,	acute	inhalation	local	15 mg/m³
Consumer DNE	EL, long-term	inhalation	local	8 mg/m³
Consumer DNE	EL, acute	inhalation	local	15 mg/m³
13138-45-9	nickel dinitrate			
Consumer DNE	EL, acute	oral	systemic	0,012 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,02 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	104 mg/m³
Worker DNEL, acute		inhalation	local	1,6 mg/m³
Consumer DNEL, acute		inhalation	systemic	8,8 mg/m³
Consumer DNE	EL, acute	inhalation	local	0,1 mg/m³

PNEC values

CAS No	Substance	
Environmenta	al compartment	Value
13138-45-9	nickel dinitrate	
Freshwater		0,0071 mg/l
Freshwater (intermittent releases)		0 mg/l
Marine water		0,0086 mg/l
Freshwater se	ediment	109 mg/kg
Marine sediment		109 mg/kg
Secondary poisoning		0,12 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,33 mg/l
Soil		29,9 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

Suitable eye protection:

Face protection shield



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goggles.

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.

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact

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

By short-term hand contact

Recommended glove articles: KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11 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).

Skin protection

Wear suitable protective clothing. Protective clothing acid-resistant

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation Filtering device with filter or ventilator filtering device of type: E-(P2)

Environmental exposure controls

Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour:

Odour: odourless Odour threshold: No data available

Melting point/freezing point: No data available Boiling point or initial boiling point and No data available

boiling range:

Flammability: not applicable not applicable

No data available

Print date: 12.12.2023

Lower explosion limits: No data available Upper explosion limits: Flash point: X

Auto-ignition temperature: No data available Decomposition temperature: No data available pH-Value:



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Viscosity / kinematic:

Water solubility:

No data available easily soluble

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:

Vapour pressure:

Vapour pressure:

No data available

Vapour pressure:

No data available

No data available

No data available

1,0132 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
No data available
Self-ignition temperature

Solid: not applicable
Gas: not applicable

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available
Solvent content:

No data available
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:

Flow time:

No data available

No data available

Further Information
Corrosive to metals

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Keep away from: 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



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SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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

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	
7697-37-2	nitric acid						
	inhalation vapour	ATE 2,65 n	ng/l				
13138-45-9	nickel dinitrate						
	oral	LD50 mg/kg	361,9		Regul Toxicol and Pharmacol (doi.org/10.	OECD Guideline 425	
	inhalation vapour	ATE	11 mg/l				
	inhalation dust/mist	ATE	1,5 mg/l				

Irritation and corrosivity

Based on available data, the classification criteria are not met. slightly irritant but not relevant for classification.

Sensitising effects

Based on available data, the classification criteria are not met. Contains nickel dichloride. May produce an allergic reaction.

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.

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

There are no data available on the mixture itself.

Further information

Irritant

SECTION 12: Ecological information



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12.1. Toxicity

There are no data available on the mixture itself.

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		
7697-37-2	nitric acid						
	Acute fish toxicity	LC50 mg/l	1559	96 h	Topeka shiner	Environmental Toxicology and Chemistry,	other: ASTM E729-26
	Fish toxicity	NOEC	268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical
	Algae toxicity	NOEC mg/l	> 419	10 d	several benthic diatoms; see results	Marine Biology 43:307-315 (1977)	Ten cultures of benthic diatoms were iso
	Acute bacteria toxicity	EC50 mg/l ()	> 1000	3 h	Activated sludge	Study report (2008)	OECD Guideline 209
13138-45-9	nickel dinitrate						
	Acute fish toxicity	LC50 mg/l	15,3	96 h	Oncorhynchus mykiss	Aquatic Toxicology 63 (2003) 65-82 (2003	other: not reported
	Acute algae toxicity	ErC50 mg/l	0,237	72 h	Ankistrodesmus falcatus	Publication (2009)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	0,2663	48 h	Ceriodaphnia dubia	Study report (2004)	other: American society of testing and m
	Fish toxicity	NOEC mg/l	0,057	32 d	Pimephales promelas	Water Resources Research Institute. Kent	other: ASTM 1980, E-729
	Algae toxicity	NOEC	0,6 mg/l	14 d	Anabaena cylindrica	Environ. Pollut. (Series A). 25(4):241-2	other: not reported
	Crustacea toxicity	NOEC mg/l	0,04	42 d	Daphnia magna	Wat. Res. 24(7):845-852 (1990)	Chronic exposure to sublethal concentrat
	Acute bacteria toxicity	EC50)	33 mg/l (0,5 h	Activated sludge	Journal of Hazardous Materials. B139:332	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.

BCF

CAS No	Chemical name	BCF	Species	Source
13138-45-9	nickel dinitrate	23	Spirodela polyrhiza	Ecotoxicology and en

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment



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The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

The substance in the mixture does 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

Discharge into the environment must be avoided.

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Further information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

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

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	IIN number	or ID number:	UN 1789
174. I.	ON HUILIDE	or in indiliber.	011 1703

14.2. UN proper shipping name: HYDROCHLORIC ACID

14.3. Transport hazard class(es): 14.4. Packing group: Ш Hazard label: 8 Classification code: C₁ **Special Provisions:** 520 Limited quantity: 5 I Excepted quantity: E1 Transport category: 3 80 Hazard No: Tunnel restriction code: F

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1789

14.2. UN proper shipping name: HYDROCHLORIC ACID

14.3. Transport hazard class(es):814.4. Packing group:IIIHazard label:8Classification code:C1Special Provisions:520Limited quantity:5 LExcepted quantity:E1

Marine transport (IMDG)

14.1. UN number or ID number: UN 1789

14.2. UN proper shipping name: HYDROCHLORIC ACID

14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8



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Special Provisions: 223
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1789

14.2. UN proper shipping name: HYDROCHLORIC ACID

14.3. Transport hazard class(es):814.4. Packing group:IIIHazard label:8Special Provisions:A3 A803Limited quantity Passenger:1 L

Excepted quantity: E1

IATA-packing instructions - Passenger: 852

IATA-max. quantity - Passenger: 5 L

IATA-packing instructions - Cargo: 856

14.5. Environmental hazards

IATA-max. quantity - Cargo:

Passenger LQ:

ENVIRONMENTALLY HAZARDOUS: No

SECTION 15: Regulatory information

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

Y841

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 27, Entry 75

Information according to Directive

Not subject to 2012/18/EU (SEVESO III)

60 I

2012/18/EU (SEVESO III):

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): -- non-hazardous to water

SECTION 16: Other information

Changes

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



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Abbreviations and acronyms

Ox. Liq: Oxidising liquids Ox. Sol: Oxidising solids Met. Corr: Corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage

Resp. Sens: Respiratory sensitisation

Skin Sens: Skin sensitisation Muta: Germ cell mutagenicity Carc: Carcinogenicity

Repr: Reproductive toxicity

STOT SE: Specific target organ toxicity - single exposure STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

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 GB CLP Regulation

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data

Relevant H and EUH statements (number and full text)

H2/2	iviay intensity tire; oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye dama

age.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H318 Causes serious eye damage.

H331 Toxic if inhaled. H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation. H335 H341 Suspected of causing genetic defects. H350i May cause cancer by inhalation. H360D May damage the unborn child.

Causes damage to organs through prolonged or repeated exposure. H372

H400 Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects. H410

EUH071 Corrosive to the respiratory tract.

EUH208 Contains nickel dichloride. May produce an allergic reaction.

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



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