

Quick bluing Black Magic

Revision date: 14.04.2023

Product code: 0221

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

1.1. Product identifier

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UFI:
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M12R-9MW4-T003-2J5N

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

Use of the substance/mixture

Liquid for burnishing (blackening) ferrous metals.

Uses advised against

Not suitable for use on alloys containing aluminium.

1.3. Details of the supplier of the safety data sheet

Company name:	MARAWE GmbH & Co. KG	
Street:	Donaustaufer Str. 378 - Gebäude 64	
Place:	D-93055 Regensburg	
Telephone: e-mail: Contact person: Internet:	+49 941 / 29020439 info@marawe.de Product safety department www.marawe.de	Telefax: +49 941 / 29020593
1.4. Emergency telephone number:	+49 941 / 29020439, Mon-Thu 9:00 - 16:00; Fri 9:00 - 14:00	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Met. Corr. 1; H290 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

- Hazard components for labelling
 - selenious acid nitric acid copper sulphate pentahydrate sodium fluoride

Signal word:

Danger

Pictograms:



Hazard statements

H290 H302+H332 H314 May be corrosive to metals. Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage.



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H400	Very toxic to aquatic life.	
H411	Toxic to aquatic life with long lasting effects.	
Precautionary statemen	its	
P101	If medical advice is needed, have product container or label at hand.	
P102	Keep out of reach of children.	
P260	Do not breathe mist/vapours/spray.	
P264	Wash hands thoroughly after handling.	
P273	Avoid release to the environment.	
P280	Wear protective gloves/protective clothing/eye protection/face protection.	
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.	
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.	
P310	Immediately call a POISON CENTER/doctor.	
P405	Store locked up.	
P501	Dispose of contents/container to an appropriate recycling or disposal facility according to local/national regulations.	

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
7783-00-8	selenious acid			5 - < 10 %
	231-974-7			
	Acute Tox. 3, Acute Tox. 3, STOT I H400 H410	RE 2, Aquatic Acute 1, Aquatic 0	Chronic 1; H331 H301 H373	
7697-37-2	nitric acid	5 - < 10 %		
	231-714-2		01-2119487297-23	
	Ox. Liq. 2, Met. Corr. 1, Acute Tox.			
7758-99-8	copper sulphate pentahydrate	1.9 - < 5 %		
	231-847-6		01-2119520566-40	
	Acute Tox. 4, Eye Dam. 1, Aquatic			
7631-99-4	sodium nitrate	1.9 - < 5 %		
	231-554-3			
	Ox. Liq. 2, Eye Irrit. 2; H272 H319		•	
7681-49-4	sodium fluoride	< 1 %		
	231-667-8			
	Acute Tox. 3, Skin Irrit. 2, Eye Irrit.	2; H301 H315 H319 EUH032		

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



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CAS No	EC No	Chemical name	Quantity					
	Specific Conc. Limits, M-factors and ATE							
7783-00-8	231-974-7	selenious acid	5 - < 10 %					
	inhalation: A mg/kg	TE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); oral: ATE = 100						
7697-37-2	231-714-2	nitric acid	5 - < 10 %					
	H272: >= 99	C50 = 2,65 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists) Ox. Liq. 2; - 100 Ox. Liq. 3; H272: >= 70 - < 99 Skin Corr. 1A; H314: >= 20 - 100 Skin 14: >= 5 - < 20						
7758-99-8	231-847-6	copper sulphate pentahydrate	1.9 - < 5 %					
	oral: LD50 =	300 mg/kg M acute; H400: M=10						
7631-99-4	231-554-3	sodium nitrate	1.9 - < 5 %					
	dermal: LD5	0 = > 5000 mg/kg; oral: LD50 = 3430 mg/kg						
7681-49-4	231-667-8	sodium fluoride	< 1 %					
		148,5 mg/kg						

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. This product contains selenium dioxide. Selenium dioxide can be absorbed by skin and can damage the nerves. Absolutely avoid contaminations. Don't use on aluminium, as this can create the highly toxic hydrogen selenide!

After inhalation

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

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.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable.



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5.3. Advice for firefighters

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

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. In the event of serious contamination of a water body, the sewerage system or the soil, notify the competent administrative and control authorities and rescue organisations.

6.3. Methods and material for containment and cleaning up

For containment

Make sure spills can be contained, e.g. in sump pallets or kerbed areas.

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

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. Do not breathe gas/fumes/vapour/spray. Wenn eine lokale Absaugung nicht möglich oder unzureichend ist, muss der gesamte Arbeitsbereich ausreichend technisch belüftet werden.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

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.

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 exhaustion at critical locations.

Hints on joint storage

The regulations of the Ordinance on Hazardous Substances with its respective technical rules (TRGS 510) have to be respected.

Do not store together with: strong alkalis, Oxidizing agent, Organic peroxides.

7.3. Specific end use(s)

Liquid for burnishing (blackening) ferrous metals.



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL
	Selenium and compounds, except hydrogen selenide (as Se)	-	0.1		TWA (8 h)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
7697-37-2	nitric acid			
Worker DNEL	, acute	inhalation	local	2,6 mg/m ³
Worker DNEL	, long-term	inhalation	local	1,3 mg/m ³
Consumer DN	EL, acute	inhalation	local	1,3 mg/m³
Consumer DN	EL, long-term	inhalation	local	0,65 mg/m³
7631-99-4	sodium nitrate			
Consumer DNEL, long-term		oral	systemic	12,5 mg/kg bw/day
Worker DNEL	long-term	dermal	systemic	20,8 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	12,5 mg/kg bw/day
Worker DNEL	, long-term	inhalation	systemic	36,7 mg/m³
Consumer DN	EL, long-term	inhalation	systemic	10,9 mg/m ³
7681-49-4	sodium fluoride			
Worker DNEL	long-term	dermal	systemic	0,36 mg/kg bw/day
Worker DNEL	, acute	inhalation	systemic	2,5 mg/m³
Worker DNEL	, long-term	inhalation	local	2,5 mg/m ³

PNEC values

CAS No	Substance				
Environment	Environmental compartment Value				
7631-99-4	sodium nitrate				
Freshwater		0,45 mg/l			
Marine water	0,045 mg/l				
Micro-organi	sms in sewage treatment plants (STP)	18 mg/l			
7681-49-4	sodium fluoride				
Freshwater		0,9 mg/l			
Micro-organi	sms in sewage treatment plants (STP)	51 mg/l			
Soil	11 mg/kg				

8.2. Exposure controls



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according to UK REACH Regulation

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Appropriate engineering controls

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

Tight sealing protective goggles (DIN EN 166).

Hand protection

Test substance: Nitric acid (10% w/w) Suitable material: NBR (Nitrile rubber) Material thickness: 0,1 mm Breakthrough time:: 480 min

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

It is recommended to check the condition of the gloves regularly and replace them if they show signs of wear or damage.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Recommended filter type: B identification colour: yellow

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Colour:	Liquid light blue	
Odour:	stinging	
Changes in the physical state		
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		> 100 °C
Flash point:		> 60 °C
Flammability Solid/liquid: Gas:		not applicable not applicable
Lower explosion limits: Upper explosion limits:		not determined not determined



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Self-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not determined	
pH-Value (at 20 °C):	0 - 1,0	
Water solubility:	easily soluble	
Solubility in other solvents not determined		
Partition coefficient n-octanol/water:	not determined	
Vapour pressure: (at 20 °C)	< 20 hPa	
Density (at 20 °C):	1,1-1,2 g/cm³	
Relative vapour density:	not determined	
9.2. Other information		
Information with regard to physical hazard	classes	
Oxidizing properties		
Not oxidising.		
Other safety characteristics		
Solid content:	not determined	
Evaporation rate:	not determined	
Further Information		

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Base, Peroxides, Oxidizing agent.

This product contains selenium dioxide. Selenium dioxide can be absorbed by skin and can damage the nerves. Absolutely avoid contaminations. Don't use on aluminium, as this can create the highly toxic hydrogen selenide!

10.4. Conditions to avoid

extreme temperatures

10.5. Incompatible materials

Keep away from: Base, Oxidizing agent, Peroxides. Aluminium

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed. Harmful if inhaled.

ATEmix calculated

ATE (oral) 966,2 mg/kg; ATE (inhalation vapour) 16,58 mg/l; ATE (inhalation dust/mist) 2,927 mg/l



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CAS No	Chemical name							
	Exposure route	Dose		Species	Source	Method		
7783-00-8	selenious acid							
	oral	ATE mg/kg	100					
	inhalation vapour	ATE	3 mg/l					
	inhalation dust/mist	ATE	0,5 mg/l					
7697-37-2	nitric acid							
	inhalation (4 h) vapour	LC50	2,65 mg/l	Rat	Manufacturer	OECD 403		
	inhalation dust/mist	ATE	0,5 mg/l					
7758-99-8	copper sulphate pentahy	drate						
	oral	LD50 mg/kg	300	Rat	Manufacturer			
7631-99-4	sodium nitrate							
	oral	LD50 mg/kg	3430	Rat	Manufacturer	OECD 401		
	dermal	LD50 mg/kg	> 5000	Rat	Manufacturer			
7681-49-4	sodium fluoride							
	oral	LD50 mg/kg	148,5	Rat	OPPTS 870 1100			

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

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.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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CAS No	Chemical name								
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method		
7783-00-8	selenious acid								
	Acute fish toxicity	LC50 mg/l	0,599	96 h		GESTIS Substance Database			
	Acute crustacea toxicity	EC50 mg/l	0,55		Daphnia magna (Big water flea)	ECHA registration dossier	EPA-660/3-75-00 9		
7697-37-2	nitric acid								
	Acute fish toxicity	LC50 mg/l	12,5	96 h	Oncorhynchus mykiss (Rainbow trout)	Manufacturer			
	Acute crustacea toxicity	EC50 mg/l	0,492		Daphnia magna (Big water flea)	Manufacturer			
7758-99-8	copper sulphate pentahyo	Irate							
	Acute fish toxicity	LC50	< 1 mg/l	96 h		Manufacturer			
7631-99-4	sodium nitrate								
	Acute fish toxicity	LC50 mg/l	> 1000	96 h	Oncorhynchus mykiss (Rainbow trout)	Manufacturer			
	Acute crustacea toxicity	EC50 mg/l	> 1000		Daphnia magna (Big water flea)	Manufacturer			
7681-49-4	sodium fluoride								
	Acute fish toxicity	LC50	51 mg/l	96 h	unspecified	Manufacturer			
	Acute algae toxicity	ErC50 mg/l	43 - 122	96 h	unspecified	Manufacturer			
	Acute crustacea toxicity	EC50 mg/l	26 - 48		Daphnia magna (Big water flea)	Manufacturer			

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7631-99-4	sodium nitrate	>=4

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

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

The product has not been tested. **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

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



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Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY; wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising); pickling acids; hazardous waste

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.

SECTION 14: Transport information

Land transport (ADR/RID) 14.1. UN number or ID number: UN 1760 14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (NITRIC ACID, SELENOUS ACID) 14.3. Transport hazard class(es): 8 П 14.4. Packing group: Hazard label: 8 Classification code: C9 Special Provisions: 274 Limited quantity: 1 L Excepted quantity: E2 Transport category: 2 Hazard No: 80 Tunnel restriction code: Е Inland waterways transport (ADN) 14.1. UN number or ID number: UN 1760 14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (NITRIC ACID, SELENOUS ACID) 14.3. Transport hazard class(es): 8 14.4. Packing group: Ш Hazard label: 8 Classification code: C9 Special Provisions: 274 Limited quantity: 11 Excepted quantity: F2 Marine transport (IMDG) 14.1. UN number or ID number: UN 1760 14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S. (NITRIC ACID, SELENIOUS ACID) 8 14.3. Transport hazard class(es): 14.4. Packing group: П Hazard label: 8



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Special Provisions:	274	
Limited quantity:	1L	
Excepted quantity: EmS:	E2 F-A, S-B	
	г-А, 3-В	
Air transport (ICAO-TI/IATA-DGR) <u>14.1. UN number or ID number:</u>	UN 1760	
14.2. UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (NITRIC ACID, SELENIOUS ACID)	
14.3. Transport hazard class(es):	8	
14.4. Packing group:	II	
Hazard label:	8	
	8	
Special Provisions:	A3 A803	
Limited quantity Passenger:	0.5 L	
Passenger LQ:	Y840	
Excepted quantity:	E2	
IATA-packing instructions - Passenger: IATA-max. quantity - Passenger:	851 1 L	
IATA-packing instructions - Cargo:	855	
IATA-max. quantity - Cargo:	30 L	
14.5. Environmental hazards		
ENVIRONMENTALLY HAZARDOUS:	No	
<u>14.6. Special precautions for user</u> Warning: strongly corrosive. <u>14.7. Maritime transport in bulk according t</u>	to IMO instruments	
not applicable		
SECTION 15: Regulatory information		
15.1. Safety, health and environmental regu	Ilations/legislation specific for the substance or mixture	
EU regulatory information		
Restrictions on use (REACH, annex XVII)	:	
Entry 3		
National regulatory information		
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juve	enile
Water hazard class (D):	work protection guideline' (94/33/EC). 3 - highly hazardous to water	
15.2. Chemical safety assessment		
	stances in this mixture were not carried out.	

SECTION 16: Other information

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



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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
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Corr. 1; H314	On basis of test data
Eye Dam. 1; H318	On basis of test data
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.
EUH071	Corrosive to the respiratory tract.

Further Information

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