

Safety Data Sheet

GB6500SS

Version number: 1.4

Date of compilation: 2026-01-06

SECTION 1: Identification

1.1 Product identifier

Trade name **Gun Barrel Cleaning Solution**
SDS Identifier **GB6500SS**

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

Relevant identified uses laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

AquaPhoenix Scientific
860 Gitts Run Road
Hanover PA 17331
United States

Telephone: (866) 632-1291
e-mail: info@aquaphoenixsci.com
Website: <https://www.aquaphoenixsci.com/>

1.4 Emergency telephone number

Emergency information service ChemTel Inc.: 1-800-255-3924, +01-813-248-0585

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

Hazard class	Category	Hazard class and category	Hazard statement
substance or mixture corrosive to metals	1	Met. Corr. 1	H290
acute toxicity (oral)	3	Acute Tox. 3	H301
acute toxicity (dermal)	3	Acute Tox. 3	H311
acute toxicity (inhal.)	3	Acute Tox. 3	H331
skin corrosion/irritation	1B	Skin Corr. 1B	H314
serious eye damage/eye irritation	1	Eye Dam. 1	H318
germ cell mutagenicity	2	Muta. 2	H341
carcinogenicity	1A	Carc. 1A	H350
reproductive toxicity	2	Repr. 2	H361f
specific target organ toxicity - repeated exposure	2	STOT RE 2	H373
hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the

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dermis. Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

- Signal word danger

- Pictograms

GHS05, GHS06, GHS08,
GHS09



- Hazard statements

H290	May be corrosive to metals.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

- Precautionary statements

P203	Obtain, read and follow all safety instructions before use.
P234	Keep only in original packaging.
P260	Do not breathe dusts or mists.
P262	Do not get in eyes, on skin, or on clothing.
P264+P265	Wash hands thoroughly after handling. Do not touch eyes.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or with adequate ventilation.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P316	IF SWALLOWED: Get emergency medical help immediately.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P302+P361+P354	IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P318	IF exposed or concerned, get medical advice.
P321	Specific treatment (see on this label).
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material-damage.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in a corrosion resistant container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- Hazardous ingredients for labelling

Ethanol, mercury dichloride, Nitric Acid, Ferric Chloride Hexahydrate

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2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Water	CAS No 7732-18-5	90.37		
mercury dichloride	CAS No 7487-94-7	5	Acute Tox. 2 / H300 Acute Tox. 1 / H310 Skin Corr. 1B / H314 Muta. 2 / H341 Repr. 2 / H361f STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	
Ethanol	CAS No 64-17-5	2.059	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 Carc. 1A / H350	
Ferric Chloride Hexahydrate	CAS No 10025-77-1	1.6	Met. Corr. 1 / H290 Acute Tox. 4 / H302 Acute Tox. 5 / H313 Skin Irrit. 2 / H315 Eye Dam. 1 / H318	
Nitric Acid	CAS No 7697-37-2	0.63	Ox. Liq. 3 / H272 Met. Corr. 1 / H290 Acute Tox. 1 / H330 Skin Corr. 1A / H314 Eye Dam. 1 / H318	
Isopropanol	CAS No 67-63-0	0.2162	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336	
methyl alcohol	CAS No 67-56-1	0.103	Flam. Liq. 2 / H225 Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 STOT SE 1 / H370	
Methyl isobutyl ketone	CAS No 108-10-1	0.0216	Flam. Liq. 2 / H225 Acute Tox. 5 / H303 Acute Tox. 4 / H332 Eye Irrit. 2 / H319 Carc. 2 / H351 STOT SE 3 / H335 STOT SE 3 / H336	

Remarks

For full text of abbreviations: see SECTION 16

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SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

Medical attention may be necessary if the product gets into the eyes or on the skin.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Substance or mixture corrosive to metals.

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride (HCl)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance

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has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Wear impact- and splash-resistant eyewear.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

Control of the effects

Protect against external exposure, such as

heat, high temperatures, light, UV-radiation/sunlight

- Ventilation requirements

Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
US	hexone	108-10-1	REL	50 (10 h)	205 (10 h)	75	300				NIOSH REL
US	hexone (methyl isobutyl ketone)	108-10-1	PEL	100	410						29 CFR 1910.1000
US	methyl isobutyl ketone	108-10-1	TLV®	20		75					ACGIH® 2024
US	methyl isobutyl ketone (hexone)	108-10-1	PEL (CA)	50	205	75	300				Cal/OSHA PEL
US	ethanol	64-17-5	TLV®			1,000					ACGIH® 2024
US	ethyl alcohol	64-17-5	REL	1,000 (10 h)	1,900 (10 h)						NIOSH REL
US	ethyl alcohol (ethanol)	64-17-5	PEL (CA)	1,000	1,900						Cal/OSHA PEL
US	ethyl alcohol (ethanol)	64-17-5	PEL	1,000	1,900						29 CFR 1910.1000
US	methanol	67-56-1	TLV®	200		250				H	ACGIH® 2024
US	methyl alcohol	67-56-1	PEL	200	260						29 CFR 1910.1000
US	methyl alcohol	67-56-1	REL	200 (10 h)	260 (10 h)	250	325			H	NIOSH REL
US	methyl alcohol (methanol)	67-56-1	PEL (CA)	200	260	250	325	1,000		H	Cal/OSHA PEL
US	2-propanol	67-63-0	TLV®	200		400					ACGIH® 2024
US	isopropyl alcohol	67-63-0	PEL (CA)	400	980	500	1,225				Cal/OSHA PEL
US	isopropyl alcohol	67-63-0	REL	400 (10 h)	980 (10 h)	500	1,225				NIOSH REL
US	isopropyl alcohol	67-63-0	PEL	400	980						29 CFR 1910.1000
US	mercury, inorganic compounds	7487-94-7	PEL						0.1	Hg	29 CFR 1910.1000
US	mercury, inorganic compounds	7487-94-7	PEL (CA)		0.025				0.1	Hg, H	Cal/OSHA PEL
US	mercury, inorganic compounds	7487-94-7	TLV®		0.025					Hg, H	ACGIH® 2024
US	mercury compounds	7487-94-7	REL						0.1	H, Hg, ex.HgAlkyl	NIOSH REL
US	mercury com-	7487-94-7	REL		0.05					vap, H,	NIOSH

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Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
	pounds				(10 h)					Hg, ex.HgAlkyl	REL
US	nitric acid	7697-37-2	PEL (CA)	2	5	4	10				Cal/OSHA PEL
US	nitric acid	7697-37-2	REL	2 (10 h)	5 (10 h)	4	10				NIOSH REL
US	nitric acid	7697-37-2	TLV®	2		4					ACGIH® 2024
US	nitric acid	7697-37-2	PEL	2	5						29 CFR 1910.1000

Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
ex.HgAlkyl	except alkyl mercury compounds
H	absorbed through the skin
Hg	calculated as Hg (mercury)
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)
vap	as vapors

Biological limit values

Country	Name of agent	Parameter	Notation	Identifier	Value	Source
US	methyl isobutyl ketone	methyl isobutyl ketone		BEI®	1 mg/l	ACGIH® 2024
US	methanol	methanol		BEI®	15 mg/l	ACGIH® 2024
US	2-propanol	acetone		BEI®	40 mg/l	ACGIH® 2024

Relevant DNELs of components

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Ferric Chloride Hexahydrate	10025-77-1	DNEL	2.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
methyl alcohol	67-56-1	DNEL	130 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
methyl alcohol	67-56-1	DNEL	130 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
methyl alcohol	67-56-1	DNEL	130 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
methyl alcohol	67-56-1	DNEL	130 mg/m³	human, inhalatory	worker (industry)	acute - local effects
methyl alcohol	67-56-1	DNEL	20 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
methyl alcohol	67-56-1	DNEL	20 mg/kg	human, dermal	worker (industry)	acute - systemic effects

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Relevant DNELs of components						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
			bw/day			facts
Methyl isobutyl ketone	108-10-1	DNEL	83 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Methyl isobutyl ketone	108-10-1	DNEL	208 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Methyl isobutyl ketone	108-10-1	DNEL	83 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
Methyl isobutyl ketone	108-10-1	DNEL	208 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
Methyl isobutyl ketone	108-10-1	DNEL	11.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Methyl isobutyl ketone	108-10-1	PNEC	0.6 mg/l	aquatic organisms	freshwater	short-term (single instance)
Methyl isobutyl ketone	108-10-1	PNEC	0.06 mg/l	aquatic organisms	marine water	short-term (single instance)
Methyl isobutyl ketone	108-10-1	PNEC	27.5 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Methyl isobutyl ketone	108-10-1	PNEC	8.27 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Methyl isobutyl ketone	108-10-1	PNEC	0.83 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Methyl isobutyl ketone	108-10-1	PNEC	1.3 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Recommended: Disposable neoprene gloves, 0.1 - 0.2 mm thick, 15-120 minute breakthrough times. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- Other protection measures

Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Product description: See website or catalog for details.

Physical state	liquid
Color	clear - light yellow
Odor	like alcohol
Melting point/freezing point	-97.8 °C
Boiling point or initial boiling point and boiling range	64.7 °C at 1,013 hPa
Evaporation rate	not determined
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	455 °C (auto-ignition temperature (liquids and gases))
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Solubility(ies)	not determined

Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available
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Vapor pressure	169.3 hPa at 25 °C
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Density and/or relative density

Density	not determined
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". Substance or mixture corrosive to metals.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

Acute toxicity

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

- Acute toxicity estimate (ATE)

Oral 101.6 mg/kg
Dermal >812.4 mg/kg
Inhalation: vapor 7.915 mg/l/4h

Acute toxicity estimate (ATE) of components

Name of substance	CAS No	Exposure route	ATE
mercury dichloride	7487-94-7	oral	5.1 mg/kg
mercury dichloride	7487-94-7	dermal	41 mg/kg
Ferric Chloride Hexahydrate	10025-77-1	oral	500 mg/kg
Ferric Chloride Hexahydrate	10025-77-1	dermal	>2,000 mg/kg
Nitric Acid	7697-37-2	inhalation: vapor	0.05 mg/l/4h
methyl alcohol	67-56-1	oral	100 mg/kg
methyl alcohol	67-56-1	dermal	300 mg/kg
methyl alcohol	67-56-1	inhalation: vapor	3 mg/l/4h
Methyl isobutyl ketone	108-10-1	oral	4,570 mg/kg
Methyl isobutyl ketone	108-10-1	inhalation: vapor	11.6 mg/l/4h

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Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Name of substance	CAS No	Classification	Number
Isopropanol	67-63-0	3	
mercury dichloride		3	
Ethanol	64-17-5	1	
Methyl isobutyl ketone	108-10-1	2B	

Legend

- 1 Carcinogenic to humans
- 2B Possibly carcinogenic to humans
- 3 Not classifiable as to carcinogenicity in humans

Reproductive toxicity

Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
mercury dichloride	7487-94-7	LC50	0.016 mg/l	rainbow trout (Onco-rhynchus mykiss)	96 h
mercury dichloride	7487-94-7	EC50	2 mg/l	water flea (Daphnia)	48 h
Ethanol	64-17-5	LC50	15,400 mg/l	fish	96 h

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Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ethanol	64-17-5	EC50	12,700 mg/l	fish	96 h
Ethanol	64-17-5	ErC50	22,000 mg/l	algae	96 h
Isopropanol	67-63-0	LC50	10,000 mg/l	fish	96 h
methyl alcohol	67-56-1	LC50	15,400 mg/l	fish	96 h
methyl alcohol	67-56-1	EC50	12,700 mg/l	fish	96 h
methyl alcohol	67-56-1	ErC50	22,000 mg/l	algae	96 h
Methyl isobutyl ketone	108-10-1	LC50	>179 mg/l	fish	96 h
Methyl isobutyl ketone	108-10-1	EC50	>200 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
mercury dichloride	7487-94-7	EC50	0.01 mg/l	other organisms	5 d
Ethanol	64-17-5	LC50	1,806 mg/l	aquatic invertebrates	10 d
Ethanol	64-17-5	ErC50	675 mg/l	algae	4 d

12.2 Persistence and degradability

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Ethanol	64-17-5	oxygen depletion	69 %	5 d		ECHA
Isopropanol	67-63-0	oxygen depletion	53 %	5 d		ECHA
methyl alcohol	67-56-1	oxygen depletion	69 %	5 d		ECHA
Methyl isobutyl ketone	108-10-1	oxygen depletion	83 %	28 d		ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Water	7732-18-5		-0.467 (pH value: 7, 20 °C)	
mercury dichloride	7487-94-7	5,680		
Ethanol	64-17-5		-0.77	0.6211
methyl alcohol	67-56-1		-0.77	
Methyl isobutyl ketone	108-10-1		1.9 (pH value: 6.7)	

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12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT	UN 2922
IMDG-Code	UN 2922
ICAO-TI	UN 2922

14.2 UN proper shipping name

DOT	Corrosive liquid, toxic, n.o.s.
IMDG-Code	CORROSIVE LIQUID, TOXIC, N.O.S.
ICAO-TI	Corrosive liquid, toxic, n.o.s.
Technical name (hazardous ingredients)	Ferric Chloride Hexahydrate, mercury dichloride

14.3 Transport hazard class(es)

DOT	8 (6.1)
IMDG-Code	8 (6.1)
ICAO-TI	8 (6.1)

14.4 Packing group

DOT	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards

	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment)	mercury dichloride

14.6 Other relevant information

Shipping container markings and labels, received from AquaPhoenix, may vary from the above information. Products that are regulated for transport will be packaged by AquaPhoenix as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations. AquaPhoenix may also elect to ship certain products as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III. In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

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14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Particulars in the shipper's declaration	UN2922, Corrosive liquid, toxic, n.o.s., (Ferric Chloride Hexahydrate, mercury dichloride, mixture), 8 (6.1), III, environmentally hazardous
Reportable quantity (RQ)	62,500 lbs (28,375 kg) (Ferric Chloride Hexahydrate) (Nitric Acid)
Danger label(s)	8+6.1, fish and tree



Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	IB3, T7, TP1, TP28
ERG No	154

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant	yes (hazardous to the aquatic environment) (Mercuric Chloride)
Danger label(s)	8+6.1, fish and tree



Special provisions (SP)	223, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-A, S-B
Stowage category	B

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	8+6.1



Special provisions (SP)	A3, A4
Excepted quantities (EQ)	E1
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

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Toxic Substance Control Act (TSCA)

all ingredients are listed (ACTIVE) or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
Nitric Acid	7697-37-2		1,000	1000
mercury dichloride	7487-94-7		500	500/10000

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
Nitric Acid	7697-37-2		1986-12-31
Isopropanol	67-63-0	only persons who manufacture by the strong acid process are subject, supplier notification not required	1986-12-31
methyl alcohol	67-56-1		1986-12-31
mercury dichloride			1986-12-31
Methyl isobutyl ketone	108-10-1		1986-12-31

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Nitric Acid	7697-37-2		1	1000 (454)
Ferric Chloride Hexahydrate	7705-08-0		1	1000 (454)
methyl alcohol	67-56-1		3 4	5000 (2270)
Methyl isobutyl ketone	108-10-1		3 4	5000 (2270)

Legend

- 1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act
3 "3" indicates that the source is section 112 of the Clean Air Act
4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)

Clean Air Act

Name of substance	CAS No	Type of registration	Basis for listing	Threshold quantity (lbs)
Nitric Acid	7697-37-2	Toxic substance	b	15000

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Legend

b On EHS list, vapor pressure 10 mmHg or greater.

Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
Nitric Acid	7697-37-2		CO R2
Ferric Chloride Hexahydrate	7705-08-0		CO
Isopropanol	67-63-0		F3
methyl alcohol	67-56-1		TE F3
mercury dichloride	7487-94-7		CA MU R1
Ethanol	64-17-5		CA MU TE F3
Methyl isobutyl ketone	108-10-1		F3 R1

Legend

CA Carcinogenic
 CO Corrosive
 F3 Flammable - Third Degree
 MU Mutagenic
 R1 Reactive - First Degree
 R2 Reactive - Second Degree
 TE Teratogenic

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Proposition 65 List of chemicals			
Name acc. to inventory	CAS No	Remarks	Type of the toxicity
methanol	67-56-1		developmental
mercury compounds			developmental
ethanol (ethyl alcohol)	64-17-5	in alcoholic beverages	developmental
methyl isobutyl ketone	108-10-1		cancer
methyl isobutyl ketone (MIBK)	108-10-1		developmental

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

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Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)

Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China

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Legend

INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

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

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2024	From ACGIH®, 2024 TLVs® and BEIs® Book. Copyright 2024. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either

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Abbr.	Descriptions of used abbreviations
	growth (EbC50) or growth rate (ErC50) relative to the control
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water
Met. Corr.	Substance or mixture corrosive to metals
Muta.	Germ cell mutagenicity
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP	No-Longer Polymer
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
Ox. Liq.	Oxidizing liquid
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Repr.	Reproductive toxicity
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

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Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").
Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG).
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H361f	Suspected of damaging fertility.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
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.

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Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.