Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

METALGUARD® G5

Version number: 11.0
Replaces version of: 2021-08-19 (10)

Revision: 2026-03-13

SECTION 1: Identification

1.1 Product identifier

Trade name	**METALGUARD® G5**
Product code(s)	G5

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

Relevant identified uses	Corrosion inhibitor for automotive antifreeze Industrial use Professional use
Uses advised against	Do not use for squirting or spraying Do not use for products which come into direct contact with the skin Do not use for private purposes (household) Do not use for other than recommended use

1.3 Details of the supplier of the safety data sheet

WEBA Technology
NFS CAP WEBA, LLC
500 Cummings Center, Suite 6050
Beverly MA 01915 United States

Telephone: +1 812-822-3658
e-mail: info@webacorp.com

Additional information

e-mail (competent person) info@webacorp.com

1.4 Emergency telephone number

Poison center		
Country	**Name**	**Telephone**
United States	CHEMTREC	1-800-424-9300 (NORTH AMERICA) +1-703-527-3887 (INTERNATIONAL)

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and category	Hazard state-ment
A.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
A.2	skin corrosion/irritation	1	Skin Corr. 1	H314
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.7	reproductive toxicity	1B	Repr. 1B	H360FD
A.8R	specific target organ toxicity - single exposure (respiratory tract	3	STOT SE 3	H335

Section	Hazard class	Category	Hazard class and category	Hazard state-ment
	irritation)			

For full text of H-phrases: 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 dermis.

2.2 Label elements

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

- signal word: Danger

- pictograms

GHS05, GHS07, GHS08

- hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.

- precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/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.
P304+P340	If inhaled: Remove person to fresh air and keep comfortable for breathing.
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.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- hazardous ingredients for labelling

Contains: disodium tetraborate; 2-aminoethanol; sodium nitrite; Sodium 4(or 5)-methyl-1H-benzotriazolide.

2.3 Other hazards

Hazards not otherwise classified

Toxic to aquatic life with long lasting effects (GHS category 2: aquatic toxicity - acute and/or chronic).
Harmful to aquatic life with long lasting effects (GHS category 3: aquatic toxicity - acute and/or chronic).

Can cause very long-lasting and diffuse contamination of water resources.

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of ≥ 0.1%.

Endocrine disrupting properties

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

The product does not contain (other) ingredients which are classified according to present knowledge of the supplier and contribute to the classification of the product and hence require reporting in this section.

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes	Specific Conc. Limits
2-aminoethanol	CAS No 141-43-5	10 – < 30	Acute Tox. 4 / H302 Acute Tox. 4 / H312 Acute Tox. 4 / H332 Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Flam. Liq. 4 / H227			STOT SE 3; H335: C ≥ 5 %
sodium nitrite	CAS No 7632-00-0	10 – < 30	Acute Tox. 3 / H301 Eye Irrit. 2 / H319 Ox. Sol. 3 / H272 cD / OSHA003			
Sodium 4(or 5)-methyl-1H-benzotriazolide	CAS No 64665-57-2	1 – < 5	Acute Tox. 4 / H302 Skin Corr. 1B / H314 Eye Dam. 1 / H318			
sodium nitrate	CAS No 7631-99-4	1 – < 5	Eye Irrit. 2 / H319 Ox. Sol. 3 / H272 cD / OSHA003			
disodium tetraborate	CAS No 1330-43-4	1 – < 5	Eye Irrit. 2 / H319 Repr. 1B / H360FD cD / OSHA003		11	
sodium benzoate	CAS No 532-32-1	1 – < 5	Eye Irrit. 2 / H319			
potassium hydroxide	CAS No 1310-58-3	0.1 – < 1	Acute Tox. 4 / H302 Skin Corr. 1A / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Met. Corr. 1 / H290			Skin Corr. 1A; H314: C ≥ 5 % Skin Corr. 1B; H314: 2 % ≤ C < 5 % Skin Irrit. 2; H315: 0.5 % ≤ C < 2 % Eye Dam. 1; H318: C ≥ 2 % Eye Irrit. 2; H319: 0.5 % ≤ C < 2 %

Notes

11: The classification of mixtures as reproductive toxicant is necessary if the sum of the concentrations of individual boron compounds that are classified as reproductive toxicant in the mixture as placed on the market is ≥ 0,3 %.

Consideration of other advice

As per paragraph (i) of OSHA Hazard Communication Standard 29 CFR 1910.1200, the formulation is considered a trade secret and the specific chemical identity and exact percentage (concentration) of this composition has been withheld. The specific chemical identity and exact percentage of this composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

Remarks

All the percentages given are percentages by weight unless stated otherwise. For full text of H-phrases: see SECTION 16.

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. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Do not take off clothes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

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

Following skin contact

Rinse immediately contaminated clothing and skin with plenty of water before removing clothes, if possible. Immediately call a POISON CENTER/doctor.

Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

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

For specialist advice physicians should contact the poison centre. Use of gastric lavage or emesis is contraindicated. Risk of gastric perforation. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Coordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced: Nitrogen oxides (NOx). carbon monoxide (CO), carbon dioxide (CO2), sodium oxides, boron oxides (BOx), potassium oxides.

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.

Special protective equipment for firefighters

Self-contained breathing apparatus (SCBA). Standard protective clothing for firefighters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases. Wear personal protective equipment/face protection.

6.2 Environmental precautions

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

Absorb with liquid-binding material (sand, diatomaceous earth, acid binder, universal binder, sawdust).

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

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

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

- handling of incompatible substances or mixtures

Do not mix with acids.

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

- flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids.

Control of the effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight. Frost.

Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- specific designs for storage rooms or vessels

- storage temperature — Minimum storage temperature: 15.5 °C/60 °F

- packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

See section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
US	potassium hydroxide	1310-58-3	TLV®						ACGIH® 2025
US	disodium tetraborate, anhydrous	1330-43-4	TLV®		2		6	i	ACGIH® 2025
US	ethanolamine	141-43-5	TLV®	3	8	6	15		ACGIH® 2025
US	ethanolamine	141-43-5	PEL	3	6				29 CFR 1910.1000
US	sodium benzoate	532-32-1	TLV®		2.5			i, H	ACGIH® 2025

Notation

H	absorbed through the skin
i	inhalable fraction
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

Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
2-aminoethanol	141-43-5	DNEL	1 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
2-aminoethanol	141-43-5	DNEL	0.51 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
2-aminoethanol	141-43-5	DNEL	3 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2-aminoethanol	141-43-5	DNEL	0.18 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
2-aminoethanol	141-43-5	DNEL	0.28 mg/m³	human, inhalatory	consumer (private households)	chronic - local effects
2-aminoethanol	141-43-5	DNEL	1.5 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
2-aminoethanol	141-43-5	DNEL	1.5 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
sodium nitrite	7632-00-0	DNEL	2 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
sodium nitrite	7632-00-0	DNEL	2 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	DNEL	0.54 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	DNEL	98.7 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Sodium 4(or 5)-methyl-1H-benzo-	64665-57-2	DNEL	1.4 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
triazolide						
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	DNEL	17.4 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	DNEL	0.5 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	DNEL	0.5 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
disodium tetraborate	1330-43-4	DNEL	0.79 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects
disodium tetraborate	1330-43-4	DNEL	6.7 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
disodium tetraborate	1330-43-4	DNEL	17.04 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
disodium tetraborate	1330-43-4	DNEL	17.04 mg/m³	human, inhalatory	worker (industry)	acute - local effects
disodium tetraborate	1330-43-4	DNEL	316.4 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
disodium tetraborate	1330-43-4	DNEL	3.4 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
disodium tetraborate	1330-43-4	DNEL	17.04 mg/m³	human, inhalatory	consumer (private households)	chronic - local effects
disodium tetraborate	1330-43-4	DNEL	17.04 mg/m³	human, inhalatory	consumer (private households)	acute - local effects
disodium tetraborate	1330-43-4	DNEL	159.5 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
disodium tetraborate	1330-43-4	DNEL	0.79 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
sodium benzoate	532-32-1	DNEL	3 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
sodium benzoate	532-32-1	DNEL	0.1 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
sodium benzoate	532-32-1	DNEL	62.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
sodium benzoate	532-32-1	DNEL	1.5 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
sodium benzoate	532-32-1	DNEL	0.06 mg/m³	human, inhalatory	consumer (private households)	chronic - local effects
sodium benzoate	532-32-1	DNEL	31.25 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
sodium benzoate	532-32-1	DNEL	16.6 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects
potassium hydroxide	1310-58-3	DNEL	1 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
potassium hydroxide	1310-58-3	DNEL	1 mg/m³	human, inhalatory	consumer (private households)	acute - systemic effects
potassium hydroxide	1310-58-3	DNEL	1 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
potassium hydroxide	1310-58-3	DNEL	1 mg/m³	human, inhalatory	worker (industry)	acute - local effects
potassium hydroxide	1310-58-3	DNEL	0.3 mg/m³	human, inhalatory	consumer (private households)	chronic - local effects
potassium hydroxide	1310-58-3	DNEL	0.3 mg/m³	human, inhalatory	consumer (private households)	acute - local effects

Relevant PNECs of components

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
2-aminoethanol	141-43-5	PNEC	0.028 mg/l	aquatic organisms	water	intermittent release
2-aminoethanol	141-43-5	PNEC	0.07 mg/l	aquatic organisms	freshwater	short-term (single instance)
2-aminoethanol	141-43-5	PNEC	0.007 mg/l	aquatic organisms	marine water	short-term (single instance)
2-aminoethanol	141-43-5	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-aminoethanol	141-43-5	PNEC	0.357 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-aminoethanol	141-43-5	PNEC	0.036 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-aminoethanol	141-43-5	PNEC	1.29 mg/kg	terrestrial organisms	soil	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.005 mg/l	aquatic organisms	freshwater	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.006 mg/l	aquatic organisms	marine water	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	21 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.019 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.022 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.001 mg/kg	terrestrial organisms	soil	short-term (single instance)
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	PNEC	8 µg/l	aquatic organisms	freshwater	short-term (single instance)
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	PNEC	8 µg/l	aquatic organisms	marine water	short-term (single instance)
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	PNEC	0.218 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)

Relevant PNECs of components

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	PNEC	0.117 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	PNEC	0.117 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	PNEC	45 µg/kg	terrestrial organ-isms	soil	short-term (single instance)
sodium nitrate	7631-99-4	PNEC	17 mg/l	aquatic organisms	freshwater	short-term (single instance)
sodium nitrate	7631-99-4	PNEC	16.9 mg/l	aquatic organisms	marine water	short-term (single instance)
sodium nitrate	7631-99-4	PNEC	18 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sodium nitrate	7631-99-4	PNEC	82.5 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
sodium nitrate	7631-99-4	PNEC	81.9 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
disodium tetraborate	1330-43-4	PNEC	2.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
disodium tetraborate	1330-43-4	PNEC	2.9 mg/l	aquatic organisms	marine water	short-term (single instance)
disodium tetraborate	1330-43-4	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
disodium tetraborate	1330-43-4	PNEC	5.7 mg/kg	terrestrial organ-isms	soil	short-term (single instance)
sodium benzoate	532-32-1	PNEC	305 µg/l	aquatic organisms	water	intermittent release
sodium benzoate	532-32-1	PNEC	0.581 mg/l	aquatic organisms	freshwater	short-term (single instance)
sodium benzoate	532-32-1	PNEC	0.058 mg/l	aquatic organisms	marine water	short-term (single instance)
sodium benzoate	532-32-1	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sodium benzoate	532-32-1	PNEC	2.5 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
sodium benzoate	532-32-1	PNEC	0.25 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
sodium benzoate	532-32-1	PNEC	0.159 mg/kg	terrestrial organ-isms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation. Provide eyewash stations and safety showers at the workplace.

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection

Skin protection

Chemical protective clothing.

Hand protection

Wear suitable gloves. Check leak-tightness/impermeability prior to use. 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 selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- type of material

Nitrile rubber

- material thickness

Use gloves with a minimum material thickness: ≥ 0.38 mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapors and particles, color code: Brown/Grey/Yellow/Green/White). Observe the OSHA respirator regulations cited in 29 CFR 1910.134 and use NIOSH/MSHA approved respirators.

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	clear to amber
Odor	distinctive
Melting point/freezing point	5 °C 40 °F
Boiling point or initial boiling point and boiling range	>100 °C >212 °F
Evaporation rate	not determined
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	LEL: UEL: not determined
Flash point	no data available
Auto-ignition temperature	424 °C 795.2 °F (auto-ignition temperature (liquids and gases)) calculated value, referring to a component of the mixture
Decomposition temperature	no data available
pH (value)	11.5 – 12.8 (base)
Kinematic viscosity	not determined

Solubility

Water solubility	miscible in any proportion

Partition coefficient n-octanol/water (log value)	this information is not available

Vapor pressure	10 mmHg at 20 °C 10 mmHg at 68 °F

Density and/or relative density

Density	1.195 – 1.225 $^{g}/_{cm^3}$ at 21.1 °C 1.195 – 1.225 $^{g}/_{cm^3}$ at 70 °F
Relative vapour density	>2 (air = 1)

Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Miscibility	Completely miscible with water.
Temperature class (USA, acc. to NEC 500)	T2 (maximum permissible surface temperature on the equipment: 300°C/ 572 °F)

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions. May crystallize at temperatures below 15.5 °C/60 °F.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Avoid temperatures: < 15.5 °C/60 °F

10.5 Incompatible materials

Acids, bases, oxidizers

Release of flammable materials with:

Light metals (due to the release of hydrogen in an acid/alkaline medium)

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)

Acute toxicity

Harmful if swallowed.

- acute toxicity estimate (ATE)

Exposure route	ATE
Oral	>528.8 mg/kg

Acute toxicity estimate (ATE) of components			
Name of substance	**CAS No**	**Exposure route**	**ATE**
2-aminoethanol	141-43-5	oral	1,089 mg/kg
2-aminoethanol	141-43-5	dermal	2,504 mg/kg
2-aminoethanol	141-43-5	inhalation: vapor	11 mg/l/4h
sodium nitrite	7632-00-0	oral	100 mg/kg
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	oral	735 mg/kg
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	dermal	>2,000 mg/kg
sodium nitrate	7631-99-4	oral	3,430 mg/kg
disodium tetraborate	1330-43-4	oral	>2,500 mg/kg
disodium tetraborate	1330-43-4	dermal	>2,000 mg/kg
sodium benzoate	532-32-1	dermal	>2,000 mg/kg
sodium benzoate	532-32-1	inhalation: dust/mist	>12.2 mg/l/4h
potassium hydroxide	1310-58-3	oral	333 mg/kg

Acute toxicity of components					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
2-aminoethanol	141-43-5	oral	LD50	1,089 mg/kg	rat
2-aminoethanol	141-43-5	dermal	LD50	2,504 mg/kg	rabbit
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	oral	LD50	735 mg/kg	rat
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	dermal	LD50	>2,000 mg/kg	rabbit
sodium nitrate	7631-99-4	oral	LD50	3,430 mg/kg	rat
sodium nitrate	7631-99-4	dermal	LD50	>5,000 mg/kg	rat
disodium tetraborate	1330-43-4	oral	LD50	>2,500 mg/kg	rat
disodium tetraborate	1330-43-4	dermal	LD50	>2,000 mg/kg	rabbit
sodium benzoate	532-32-1	inhalation: dust/mist	LC50	>12,200 mg/m³ /4h	rat
sodium benzoate	532-32-1	dermal	LD50	>2,000 mg/kg	rabbit
potassium hydroxide	1310-58-3	oral	LD50	333 mg/kg	rat

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

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

May damage the unborn child. May damage fertility.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

11.2 Information on other hazards

Endocrine disrupting properties

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

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-aminoethanol	141-43-5	ErC50	2.8 mg/l	algae	72 h
2-aminoethanol	141-43-5	LC50	349 mg/l	common carp (Cyprinus carpio)	96 h
2-aminoethanol	141-43-5	EC50	27.04 mg/l	daphnia magna	48 h
2-aminoethanol	141-43-5	NOEC	1 mg/l	algae	72 h
2-aminoethanol	141-43-5	growth rate (Er-Cx) 10%	0.7 mg/l	algae	72 h
sodium nitrite	7632-00-0	ErC50	>100 mg/l	algae	72 h
sodium nitrite	7632-00-0	LC50	0.54 – 26.3 mg/l	rainbow trout (Onco-rhynchus mykiss)	96 h
sodium nitrite	7632-00-0	EC50	15.4 mg/l	daphnia magna	48 h
sodium nitrite	7632-00-0	NOEC	100 mg/l	green algae (Desmod-esmus subspicatus)	72 h
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	ErC50	75 mg/l	algae	72 h
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	LC50	240 mg/l	zebra fish (Danio rerio)	24 h
Sodium 4(or 5)-methyl-1H-benzo-	64665-57-2	EC50	15.8 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
triazolide					
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	NOEC	30 mg/l	sheepshead minnow (Cyprinodon variegatus)	96 h
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	growth rate (ErCx) 10%	1.18 mg/l	algae	72 h
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	growth (EbCx) 10%	8.56 mg/l	aquatic invertebrates	48 h
sodium nitrate	7631-99-4	EC50	8,609 mg/l	aquatic invertebrates	24 h
sodium nitrate	7631-99-4	LC50	346 mg/l	common carp (Cyprinus carpio)	48 h
sodium benzoate	532-32-1	ErC50	>30.5 mg/l	algae	72 h
sodium benzoate	532-32-1	LC50	484 mg/l	fathead minnow (Pimephales promelas)	96 h
sodium benzoate	532-32-1	EC50	>30.5 mg/l	algae	72 h
sodium benzoate	532-32-1	NOEC	392.5 mg/l	fathead minnow (Pimephales promelas)	96 h
sodium benzoate	532-32-1	growth rate (ErCx) 10%	6.5 mg/l	algae	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
2-aminoethanol	141-43-5	EC50	2.5 mg/l	daphnia magna	21 d
2-aminoethanol	141-43-5	NOEC	1.24 mg/l	japanese ricefish/medaka (Oryzias latipes)	41 d
2-aminoethanol	141-43-5	LOEC	3.55 mg/l	japanese ricefish/medaka (Oryzias latipes)	41 d
2-aminoethanol	141-43-5	growth (EbCx) 10%	0.7 mg/l	algae	72 h
sodium nitrite	7632-00-0	EC50	114.9 mg/l	aquatic invertebrates	80 d
sodium nitrite	7632-00-0	LC50	>95.6 mg/l	aquatic invertebrates	80 d
sodium nitrite	7632-00-0	NOEC	21 mg/l	common carp (Cyprinus carpio)	29 d
sodium nitrite	7632-00-0	growth (EbCx) 10%	210 mg/l	microorganisms	180 min
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	EC50	>37.6 mg/l	daphnia magna	21 d
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	NOEC	18.4 mg/l	daphnia magna	21 d
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	LOEC	37.6 mg/l	daphnia magna	21 d
Sodium 4(or 5)-methyl-1H-benzo-triazolide	64665-57-2	growth (EbCx) 10%	0.97 mg/l	aquatic invertebrates	21 d
sodium nitrate	7631-99-4	ErC50	>1,700 mg/l	algae	10 d

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
sodium nitrate	7631-99-4	EC50	1,949 mg/l	fathead minnow (Pimephales promelas)	7 d
sodium nitrate	7631-99-4	LC50	1,966 mg/l	fathead minnow (Pimephales promelas)	7 d
sodium nitrate	7631-99-4	NOEC	1,187 mg/l	fish	30 d
sodium nitrate	7631-99-4	LOEC	2,152 mg/l	fish	30 d
sodium nitrate	7631-99-4	growth (EbCx) 10%	1,680 mg/l	fathead minnow (Pimephales promelas)	7 d
sodium benzoate	532-32-1	LC50	1,500 mg/l	fish	24 h
sodium benzoate	532-32-1	EC50	>5.81 mg/l	daphnia magna	21 d
sodium benzoate	532-32-1	NOEC	5.81 mg/l	daphnia magna	21 d
sodium benzoate	532-32-1	LOEC	>5.81 mg/l	daphnia magna	21 d
sodium benzoate	532-32-1	growth (EbCx) 10%	>5.81 mg/l	daphnia magna	21 d

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

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 ≥ 0.1%.

12.6 Endocrine disrupting properties

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

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number

DOT	UN 3267
IMDG-Code	UN 3267
ICAO-TI	UN 3267

14.2 UN proper shipping name

DOT	Corrosive liquid, basic, organic, n.o.s.
IMDG-Code	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
ICAO-TI	Corrosive liquid, basic, organic, n.o.s.
Technical name (Hazardous ingredients)	2-aminoethanol, sodium nitrite

14.3 Transport hazard class(es)

DOT	8
IMDG-Code	8
ICAO-TI	8

14.4 Packing group

DOT	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

No data available.

Additional 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	UN3267, Corrosive liquid, basic, organic, n.o.s., (contains: 2-aminoethanol, sodium nitrite), 8, III
Reportable quantity (RQ)	610.9 lbs (277.4 kg) (sodium nitrite) (potassium hydroxide)
Danger label(s)	8

Special provisions (SP)	IB3, T7, TP1, TP28
ERG No	153

International Maritime Dangerous Goods Code (IMDG) - additional information

Marine pollutant	-
Danger label(s)	8

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

Segregation group	18 - Alkalis

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

Danger label(s)	8

Special provisions (SP)	A3
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)

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)

None of the ingredients are listed.

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name acc. to inventory	**CAS No**	**Remarks**	**Effective date**
nitrate compounds		water dissociable; reportable only when in aqueous solution	1995-01-01
sodium nitrite	7632-00-0		1995-01-01

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

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

Name acc. to inventory	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
potassium hydroxide	1310-58-3		1	1000 (454)
sodium nitrite	7632-00-0		1	100 (45,4)

Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

Clean Air Act

None of the ingredients are listed.

Right to Know Hazardous Substance List

- Cleaning Product Right to Know Act Substance List (CA-RTK)

Name acc. to inventory	CAS No	Functionality	Authoritative Lists
Disodium tetraborate, (anhydrous)	1330-43-4		EC Annex VI CMRs - Cat. 1B

- Toxic or Hazardous Substance List (MA-TURA)

Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Threshold	De Minimis Concentration Threshold
Potassium hydroxide	1310-58-3				1.0 %
Nitrate compounds (water dissociable)		1090			1.0 %
Sodium nitrite	7632-00-0				1.0 %

- Hazardous Substances List (MN-ERTK)

Name acc. to inventory	CAS No	References	Remarks
Ethanolamine	141-43-5	A	
Borates, tetra, sodium salts		A	

Legend

A American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 1992-93", available from ACGIH

- Hazardous Substance List (NJ-RTK)

Name acc. to inventory	CAS No	Remarks	Classifications
potassium hydroxide (caustic potash)	1310-58-3		CO R1
ethanolamine (monoethanolamine)	141-43-5		CO F2
nitrate compounds			
sodium nitrite	7632-00-0		
borate, inorganic compounds			

Legend

CO Corrosive
F2 Flammable - Second Degree
R1 Reactive - First Degree

- Hazardous Substance List (Chapter 323) (PA-RTK)

Name acc. to inventory	CAS No	Classification
POTASSIUM HYDROXIDE (K(OH))	1310-58-3	E
ETHANOL, 2-AMINO-	141-43-5	
NITRIC ACID SODIUM SALT	7631-99-4	
NITROUS ACID, SODIUM SALT	7632-00-0	E
BORON SODIUM OXIDE (B4NA2O7)	1330-43-4	

Legend

E Environmental hazard

- Hazardous Substance List (RI-RTK)

Name acc. to inventory	CAS No	References
Caustic potash	1310-58-3	T, F
Lye (potassium)	1310-58-3	T, F
Potassium hydroxide	1310-58-3	T, F
2-Aminoethanol	141-43-5	T, F
2-Hydroxyethylamine	141-43-5	T, F
Ethanolamine	141-43-5	T, F
Sodium nitrate	7631-99-4	F
Borates, tetra, sodium salts	1303-96-4	T

Legend

F Flammability (NFPA®)
T Toxicity (ACGIH®)

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

None of the ingredients are listed.

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

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	2	material that must be moderately heated or exposed to relatively high ambient temperatures 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	2	material that must be moderately heated or exposed to relatively high ambient temperatures 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		

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

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

Indication of changes (revised safety data sheet)

Complete revision of the safety data sheet.

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®	American Conference of Governmental Industrial Hygienists
ACGIH® 2025	From ACGIH®, 2025 TLVs® and BEIs® Book. Copyright 2025. 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
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
cD	Combustible dust
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
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
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either 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
HHS	Higher hazard substance
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
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval

Abbr.	Descriptions of used abbreviations
LEL	Lower explosion limit (LEL)
LHS	Lower hazard substance
LOEC	Lowest Observed Effect Concentration
Met. Corr.	Substance or mixture corrosive to metals
NFPA®	National Fire Protection Association (United States)
NOEC	No Observed Effect Concentration
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. Sol.	Oxidizing solid
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 SE	Specific target organ toxicity - single exposure
TLV®	Threshold Limit Values
TWA	Time-weighted average
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

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
H227	Combustible liquid.
H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.

Code	Text
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
OSHA003	May form combustible dust concentrations in air.

Disclaimer

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