GlycoHib+™ I-50 Hydronic System Corrosion Inhibitor

Version number: 1.0

SECTION 1: Identification

1.1 Product identifier

Trade name — **GlycoHib+™ I-50 Hydronic System Corrosion Inhibitor**

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

Relevant identified uses — Corrosion inhibitors

Uses advised against — Do not use for squirting or spraying
Do not use for products which come into direct contact with the skin

1.3 Details of the supplier of the safety data sheet

CORECHEM INC
4320 Greenway Drive
Knoxville, TN 37918, United States

Telephone: 865 524 4239
Telefax: 865 524 3375
e-mail: regulatory@corecheminc.com

1.4 Emergency telephone number

Poison center

Country	Name	Telephone
-	CHEMTREC International (outside USA)	1-703-527-3887
United States	CHEMTREC USA	(800) 424-9300

As above or nearest toxicological information centre.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

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

Classification

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
A.2	skin corrosion/irritation	1	Skin Corr. 1	H314

Classification

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.4S	skin sensitization	1	Skin Sens. 1	H317
A.7	reproductive toxicity	1B	Repr. 1B	H360FD
B.13	oxidizing liquid	2	Ox. Liq. 2	H272
B.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290

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 dermis.

2.2 Label elements

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

Signal word Danger

Pictograms

GHS03, GHS05, GHS07, GHS08

Hazard statements

H272 May intensify fire; oxidizer.
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H360FD May damage fertility. May damage the unborn child.

Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220 Keep/store away from clothing/combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P234 Keep only in original container.
P260 Do not breathe mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing must not be allowed out of the workplace.

Precautionary statements

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.
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.
P308+P313	If exposed or concerned: Get medical advice/attention.
P310	Immediately call a poison center/doctor.
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use water to extinguish.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous ingredients for labelling

disodium tetraborate decahydrate
sodium benzothiazol-2-yl sulfide
sodium nitrite
sodium hydroxide

2.3 Other hazards

Results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

Description of the mixture

Hazardous ingredients

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Specific Conc. Limits
Sodium nitrite	CAS No 7632-00-0	10 – < 25	Acute Tox. 3 / H301 Eye Irrit. 2A / H319 Ox. Sol. 2 / H272		-
Disodium tetraborate decahydrate	CAS No 1303-96-4	3 – < 5	Eye Irrit. 2 / H319 Repr. 1B / H360FD		-

Hazardous ingredients

Name of sub-stance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Specific Conc. Limits
Sodium hydroxide	CAS No 1310-73-2	1 – < 3	Skin Corr. 1A / H314 Eye Dam. 1 / H318 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 %
Sodium ben-zothiazol-2-yl sulf-ide	CAS No 2492-26-4	0.3 – < 1	Skin Corr. 1B / H314 Eye Dam. 1 / H318 Skin Sens. 1 / H317 Met. Corr. 1 / H290		-

For full text of H-phrases: see SECTION 16
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Self-protection of the first aider.
Remove affected person from the danger area and lay down.
Do not leave affected person unattended.
Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.
Mouth to mouth resuscitation should be avoided. Use alternative methods, preferably with oxygen or compressed air driven apparatus.
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
Call a physician immediately. Causes poorly healing wounds.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.

Following eye contact

Rinse immediately carefully and thoroughly with eye shower or water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical advice/attention.

Following ingestion

Rinse mouth immediately and drink plenty of water.
Do NOT induce vomiting.
Get immediate medical advice/attention.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

This information is not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

water, water spray, foam

Unsuitable extinguishing media

water jet, dry extinguishing powder

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.
Oxidizing property.
Substance or mixture corrosive to metals.

Hazardous combustion products

nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), metal oxides, oxides of boron

5.3 Advice for firefighters

Non-combustible.
Keep containers cool with water spray.
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

chemical protection suit, Self-contained breathing apparatus (SCBA)

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.
Do not breathe mist/vapors/spray.
Do not get in eyes, on skin, or on clothing.
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

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 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 clean up a spill

Collect spillage.

Appropriate containment techniques

Use of adsorbent materials.
Contain spills immediately with inert materials (e.g. sand, earth).
Keep away from combustible material.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.
Take any precaution to avoid mixing with combustibles.

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

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Never add water to this product.
Take any precaution to avoid mixing with combustibles.

Specific notes/details

None.

Handling of incompatible substances or mixtures

Do not mix with acids.
Do not mix with reducing agents.

Keep away from

organic absorbing material, pulp/paper, aluminum

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.
Do not breathe mist/vapors/spray.
Do not get in eyes, on skin, or on clothing.
Avoid contact during pregnancy/while nursing.
Wash thoroughly after handling.
Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

Flammability hazards

Keep reduction valves/valves and fittings free from oil and grease.

Incompatible substances or mixtures

Incompatible materials: see section 10.
Observe compatible storage of chemicals.
Keep/store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.

Protect against external exposure, such as

heat, frost

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.
Store in corrosive resistant container with a resistant inner liner.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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	Disodium tetraborate decahydrate	1303-96-4	PEL (CA)	-	5	-	-	-	Cal/OSHA PEL
US	Disodium tetraborate decahydrate	1303-96-4	REL	-	5 (10 h)	-	-	-	NIOSH REL
US	Sodium borate decahydrate	1303-96-4	TLV®	-	2	-	6	I	ACGIH® 2023
US	Sodium hydroxide	1310-73-2	REL	-	-	-	-	-	NIOSH REL
US	Sodium hydroxide	1310-73-2	TLV®	-	-	-	-	-	ACGIH® 2023
US	Sodium hydroxide	1310-73-2	PEL	-	2	-	-	-	29 CFR 1910.1000
US	Sodium hydroxide (caustic soda)	1310-73-2	PEL (CA)	-	-	-	-	-	Cal/OSHA PEL

Notation

i inhalable fraction

Notation	
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

8.2 Exposure controls

Avoid contact during pregnancy/while nursing.

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	**Material thickness**	**Breakthrough times of the glove material**
No information available	No information available	No information available

Wear suitable gloves.
Chemical protection gloves are suitable, which are tested according to EN 374.
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.

Body protection

Protective clothing against liquid chemicals.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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

Appearance

Physical state	Liquid
Color	bright pink - red

Odor	Characteristic
Odor threshold	Not determined
Other safety parameters	
pH (value)	13.68 – 13.72
Melting point/freezing point	~0 °C
Boiling point or initial boiling point and boiling range	~100 °C
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid, gas)	Not relevant (fluid)
Explosive limits	Not determined
Vapor pressure	Not determined
Density	Not determined
Relative density	1.145 – 1.192 (water = 1)
Relative vapour density	this information is not available
Solubility(ies)	
Water solubility	Miscible in any proportion
Partition coefficient	
n-octanol/water (log KOW)	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not relevant
Viscosity	
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	None
Oxidizing properties	Oxidizer
Information for relevant hazard classes according to GHS	There is no additional information

9.2 Other information There is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s).
Oxidizing property.
Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

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

Keep reduction valves/valves and fittings free from oil and grease.

10.5 Incompatible materials

acids, reducing agents, Combustible materials, metals, organic materials

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

Classification procedure

If not otherwise specified the classification is based on:
Ingredients of the mixture (additivity formula).

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

Acute toxicity

Test data are not available for the complete mixture.
Harmful if swallowed.

Acute toxicity of components

Acute toxicity estimate (ATE) of components

Name of substance	CAS No	Exposure route	ATE
Sodium nitrite	7632-00-0	Oral	85 $^{mg}/_{kg}$

Acute toxicity of components

Name of substance	CAS No	Exposure route	End-point	Value	Species	Method	Source
Sodium nitrite	7632-00-0	Oral	LD50	85 – 180 $^{mg}/_{kg}$	Rat	-	IUCLID
Disodium tetraborate decahydrate	1303-96-4	Oral	LD0	>2,500 $^{mg}/_{kg}$	Rat, male	OECD Guideline 401	ECHA
Disodium tetraborate decahydrate	1303-96-4	Dermal	LD0	>2,000 $^{mg}/_{kg}$	Rabbit	FIFRA (40 CFR 163)	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	Oral	LD50	2,100 $^{mg}/_{kg}$	Rat, male	-	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	Dermal	LD50	>7,940 $^{mg}/_{kg}$	Rabbit	-	ECHA

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization
Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Carcinogenicity

IARC Monographs

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

National Toxicology Program (United States)

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA Carcinogens

None of the ingredients are listed.

Reproductive toxicity

May damage the unborn child.
May damage fertility.

Specific target organ toxicity - single exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

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

Aquatic toxicity (acute) of components

Name of sub-stance	CAS No	Endpoint	Expos-ure time	Value	Species	Method	Source
Sodium nitrite	7632-00-0	LC50	96 h	0.54 – 26.3 $^{mg}/_{l}$	Rainbow trout (Oncorhynchus mykiss)	-	ECHA
Sodium nitrite	7632-00-0	LC50	96 h	4.93 $^{mg}/_{l}$	Cherax quadri-carinatus	APHA 1980	ECHA

Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
Sodium nitrite	7632-00-0	EC50	48 h	15.4 mg/l	Daphnia magna	OECD Guideline 202	ECHA
Sodium nitrite	7632-00-0	ErC50	72 h	>100 mg/l	Algae (Desmodesmus subspicatus)	OECD Guideline 201	ECHA
Sodium hydroxide	1310-73-2	EC50	48 h	40.4 mg/l	Ceriodaphnia dubia (water flea)	-	ECHA
Sodium hydroxide	1310-73-2	LC50	48 h	33 – 100 mg/l	Saltwater Shrimp	-	ECHA
Sodium hydroxide	1310-73-2	LC50	96 h	<180 mg/l	Gammarus fasciatus	-	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	LC50	96 h	0.73 mg/l	Rainbow trout (Oncorhynchus mykiss)	OECD Guideline 203	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	EC50	48 h	0.71 mg/l	Daphnia magna	OECD Guideline 202	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	ErC50	72 h	0.5 mg/l	Algae (raphidocelis subcapitata)	OECD Guideline 201	ECHA

Aquatic toxicity (chronic)

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

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
Sodium nitrite	7632-00-0	LC50	80 d	>20 mg/l	Giant tiger prawn (Penaeus monodon)	APHA (1985) and Buikema et al. (1982)	ECHA
Sodium nitrite	7632-00-0	EC50	80 d	114.9 mg/l	Giant tiger prawn (Penaeus monodon)	APHA (1985) and Buikema et al. (1982)	ECHA
Sodium nitrite	7632-00-0	EC50	180 min	510 mg/l	Activated sludge, municipal	OECD Guideline 209	ECHA

Name of substance	CAS No	Endpoint	Exposure time	Value	Species	Method	Source
Sodium nitrite	7632-00-0	NOEC	29 d	1.05 mg/l	Carp (cyprinus carpio)	OECD Guideline 210	ECHA
Sodium nitrite	7632-00-0	NOEC	80 d	2 mg/l	Giant tiger prawn (Penaeus monodon)	APHA (1985) and Buikema et al. (1982)	ECHA
Sodium nitrite	7632-00-0	NOEC	72 h	100 mg/l	Algae (Desmodesmus subspicatus)	OECD Guideline 210	ECHA
Sodium nitrite	7632-00-0	Growth (EbCx) 10%	180 min	210 mg/l	Activated sludge, municipal	OECD Guideline 209	ECHA
Sodium nitrite	7632-00-0	Growth (EbCx) 80%	180 min	940 mg/l	Activated sludge, municipal	OECD Guideline 209	ECHA
Sodium hydroxide	1310-73-2	EC50	15 min	22 mg/l	Photobakterium phosphoreum	-	ECHA
Sodium hydroxide	1310-73-2	Growth (EbCx) 10%	2 min	161 mg/l	Tetrahymena sp.	-	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	EC50	21 d	0.33 mg/l	Daphnia magna	OECD Guideline 211	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	NOEC	89 d	0.041 mg/l	Rainbow trout (Oncorhynchus mykiss)	EPA OTS 797.1600	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	NOEC	21 d	0.08 mg/l	Daphnia magna	OECD Guideline 211	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	NOEC	72 h	0.066 mg/l	Algae (raphidocelis subcapitata)	OECD Guideline 201	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	LOEC	89 d	0.078 mg/l	Rainbow trout (Oncorhynchus mykiss)	EPA OTS 797.1600	ECHA

12.2 Persistence and degradability

Biodegradation

Test data are not available for the complete mixture.

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Sodium benzothiazol-2-yl sulfide	2492-26-4	Oxygen depletion	2.5 %	14 d	OECD Guideline 301 C	ECHA
Sodium benzothiazol-2-yl sulfide	2492-26-4	Carbon dioxide generation	2 %	35 d	-	ECHA

Persistence

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Data are not available.
Harmful effect on fish, plankton and other organisms due to pH shift possible.

Remarks

Keep away from drains, surface and ground water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

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.

SECTION 14: Transport information

14.1	**UN number**	
	DOT	UN3098
	IMDG-Code	UN3098
	ICAO-TI	UN3098
14.2	**UN proper shipping name**	
	DOT	Oxidizing liquid, corrosive, n.o.s.
	IMDG-Code	OXIDIZING LIQUID, CORROSIVE, N.O.S.
	ICAO-TI	Oxidizing liquid, corrosive, n.o.s.
	Technical name (hazardous ingredients)	sodium nitrite, sodium hydroxide
14.3	**Transport hazard class(es)**	
	DOT	5.1 (8)
	IMDG-Code	5.1 (8)
	ICAO-TI	5.1 (8)
14.4	**Packing group**	
	DOT	III
	IMDG-Code	III
	ICAO-TI	III
14.5	**Environmental hazards**	-
14.6	**Special precautions for user**	-
14.7	**Transport in bulk according to IMO instruments**	-

14.8 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	UN3098, Oxidizing liquid, corrosive, n.o.s., (sodium nitrite, sodium hydroxide), 5.1 (8), III
Reportable quantity (RQ)	500 lbs (227 kg) (sodium nitrite) (sodium hydroxide)
Danger label(s)	5.1+8

Special provisions (SP)	62, IB2
ERG No	140

International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant	-
Danger label(s)	5.1+8

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

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

Danger label(s)	5.1+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 of substance	Name acc. to inventory	CAS No	Remarks	Effective date
Phenolphthalein	Phenolphthalein	77-09-8	-	2011-01-01
Sodium nitrite	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 of substance	Name acc. to inventory	CAS No	Remarks	Stat-utory code	Final RQ pounds (Kg)
Sodium hydroxide	Sodium hydroxide	1310-73-2	-	1	1000 (454)
Sodium nitrite	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

Toxic or Hazardous Substance List (MA-TURA)

Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentra-tion Threshold
Phenolphthalein	Phenolphthalein	77-09-8	-	-	-	0.1 %
Sodium hydroxide	Sodium hydroxide	1310-73-2	-	-	-	1.0 %
Sodium nitrite	Sodium nitrite	7632-00-0	-	-	-	1.0 %

Hazardous Substances List (MN-ERTK)

Name of substance	Name acc. to inventory	CAS No	References	Remarks
Disodium tetraborate decahy-drate	Borates, tetra, sodium salts	-	A	-
Sodium hydroxide	Sodium hydroxide	1310-73-2	A, N, O	-

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

Legend

N National Institute for Occupational Safety and Health (NIOSH), "Recommendations for Occupational Safety and Health Standards," August 1988, available from NIOSH, Publications Dissemination Office, Division of Standards Development and Technology Transfer

O Occupational Safety and Health Administration (OSHA), Safety and Health Standards, Code of Federal Regulations, title 29, part 1910, subpart Z, "Toxic and Hazardous Substances, 1990." General information: Minnesota Department of Labor and Industry, Occupational Safety and Health Division

Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications	Listed in	Substance number	DOT number
Phenolphthalein	Phenolphthalein	77-09-8	-	CA.	5 7	4110	-
Ethanol	Ethyl alcohol (ethanol)	64-17-5	-	CA MU TE F3.	1 2 3 4 7 15 17	0844	1170
Disodium tetraborate decahydrate	Borate, inorganic compounds	-	-		2 4	0241	-
Sodium hydroxide	Sodium hydroxide (caustic soda)	1310-73-2	-	CO R1.	1 2 3 4 15 17 20	1706	1823
Sodium nitrite	Sodium nitrite	7632-00-0	-		3 6 17 18 20	2258	1500

Legend

1 Occupational Safety and Health Administration, 29 CFR 1910-Occupational Safety and Health Standards, Subpart Z-Toxicand Hazardous Substances, July 1, 2008.

15 "Fire Protection Guide to Hazardous Materials," N FPA 49 (Hazardous Chemicals Data), NFPA 325 (Guide to Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids), and NFPA 704 (Standard System for the Identification of the Hazards of Materials for Emergency Response), National Fire Protection Association (NFPA), 2001.

17 "2008 Emergency Response Guidebook," Research and Special Programs Administration, U.S. Department of Transportation, 2008.

Legend

18	List of Toxics Release Inventory Chemicals, Section 313, Emergency Planning and Community Right to Know Act (EPCRA), Toxics Release Inventory (TRI) Program, U.S. Environmental Protection Agency, 40 CFR 372.65, July 1, 2008.
2	"2009 TLVs® and BEIs®, Threshold Limit Values and Biological Exposure Indices," American Conference of Governmental Industrial Hygienists (ACGIH), 2009.
20	List of Hazardous Substances and Reportable Quantities (RQ) , Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), U.S. Environmenta l Protection Agency, 40 CFR 302, Table 302.4, July 1, 2008.
3	Office of Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 49 CFR 172.101-Hazardous Materials Table, October 1, 2008.
4	"NIOSH Pocket Guide to Chemical Hazards," National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, No. 2005-149, September 2005.
5	"Eleventh Report on Carcinogens, 2004," National Toxicology Progr am, National Institute of Environmental Health Sciences, Public Health Service, U.S. Department of Health and Human Services, 2004.
6	"Environmental Hazardous Substance List," New Jersey Department of Environmental Protection, N.J.A.C. 7:1G-2, as printed in the Community Right to Know Survey Instruction Book, 2008.
7	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, "All Supplements, All Volumes, Groups 1, 2A, 2B, and 3, International Agency for Research on Cancer (IARC), World Health Organization, 2008.
CA	Carcinogenic
CO	Corrosive
F3	Flammable - Third Degree
MU	Mutagenic
R1	Reactive - First Degree
TE	Teratogenic

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

Name acc. to inventory	CAS No	Classification
BORAX (B4NA2O7.10H2O)	1303-96-4	-
SODIUM HYDROXIDE (NA(OH))	1310-73-2	E
NITROUS ACID, SODIUM SALT	7632-00-0	E

Legend

E	Environmental hazard

Hazardous Substance List (RI-RTK)

Name of substance	Name acc. to inventory	CAS No	References
Ethanol	Ethyl alcohol	64-17-5	T, F
Disodium tetraborate decahydrate	Borates, tetra, sodium salts	1303-96-4	T
Sodium hydroxide	Caustic soda	1310-73-2	T, F
Sodium hydroxide	Lye (sodium)	1310-73-2	T, F
Sodium hydroxide	Sodium hydroxide	1310-73-2	T, F

Legend

F Flammability (NFPA®)

T Toxicity (ACGIH®)

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
Phenolphthalein	77-09-8	-	Cancer
Ethanol (ethyl alcohol)	64-17-5	In alcoholic beverages	Developmental

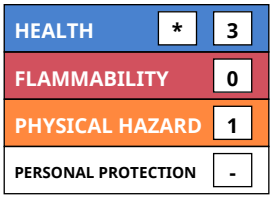
Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

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	0	Material that will not burn under typical fire conditions
Physical hazard	1	Material that is normally stable but can become unstable (self-react) at high temperatures and pressures. Material may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors
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	0	Material that will not burn under typical fire conditions
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	OX	Oxidizer that causes a severe increase in the burning rate of combustible materials with which it comes into contact

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

Date of preparation: 2023-11-14

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® 2023	From ACGIH®, 2023 TLVs® and BEIs® Book. Copyright 2023. 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
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)

Abbr.	Descriptions of used abbreviations
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
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
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IARC Monographs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
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
LHS	Lower hazard substance
LOEC	Lowest Observed Effect Concentration
Met. Corr.	Substance or mixture corrosive to metals
NFPA®	National Fire Protection Association (United States)
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
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)

Abbr.	Descriptions of used abbreviations
Ox. Sol.	Oxidizing solid
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
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
Skin Sens.	Skin sensitization
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
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.
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
H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

Code	Text
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.

Responsible for the safety data sheet

Chemical Regulatory Compliance Company
Jasper, GA
USA

Telephone: +1 (630) 410-1660
e-Mail: GHS@crc-us.com
Website: www.crc-us.com

Disclaimer

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