

From: [Nahum Lee](#)
To: [Graeme Reid](#)
Cc: [Tyree Mullaney](#); [Meaghan MacIntyre-Newell](#)
Subject: FW: jackfish spill
Date: Friday, January 26, 2024 1:48:56 PM
Attachments: [q4 spill report 2024-01-25.pdf](#)
[SDS penncool 3000.pdf](#)

Hello Graeme,

Nice to meet you today over the phone. I have reviewed the licence, associated documents and the spill report. I appreciate the NTPC diligence in reporting this and other spills. As there is no possible method for clean-up/recovery of the potential contaminant, I will be closing the spill immediately. I will refer you to Part G, Condition 3.(d) of the licence and will expect a follow-up report outlining measures the NTPC will take to prevent spills of this nature in the future. This report should be submitted no later than February 24th, 2024. Please contact myself or Meaghan_MacIntyre-Newell@gov.nt.ca in the event that you have additional questions or concerns. Take care and have a good day.

Regards,

Nahum



Nahum Lee

Resource Management Officer III (Inspector)

North Slave Regional Office
Land and Water Division, Environment and Climate Change
Government of the Northwest Territories
140 Bristol Avenue, YELLOWKNIFE, NT X1A 3T2
Cell: 867.444.8491 Phone: 867.767.9187 ext. 24187
Fax: 867.873.9754 Email: Nahum_Lee@gov.nt.ca

From: Graeme Reid [mailto:GReid@ntpc.com]
Sent: January 26, 2024 11:26 AM
To: Nahum Lee
Subject: jackfish spill

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FYI

Graeme Reid

Pronouns: He/Him/His
Environmental Analyst
Northwest Territories Power Corporation

4 Capitol Drive
Hay River, NT, X0E 1G2
Tel: 867-874-5306
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NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND
OTHER HAZARDOUS MATERIALS



NT-NU 24-HOUR SPILL REPORT LINE

Tel: (867) 920-8130 • Fax: (867) 873-6924 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date: MM DD YY	Report Time:	<input type="checkbox"/> Original Spill Report OR <input type="checkbox"/> Update # _____ to the Original Spill Report	Report Number:	
	Occurrence Date: MM DD YY	Occurrence Time:			
C	Land Use Permit Number (if applicable):	Water Licence Number (if applicable):			
D	Geographic Place Name or Distance and Direction from the Named Location:		Region: <input type="checkbox"/> NT <input type="checkbox"/> Nunavut <input type="checkbox"/> Adjacent Jurisdiction or Ocean		
E	Latitude: _____ Degrees _____ Minutes _____ Seconds		Longitude: _____ Degrees _____ Minutes _____ Seconds		
F	Responsible Party or Vessel Name:		Responsible Party Address or Office Location:		
G	Any Contractor Involved:		Contractor Address or Office Location:		
H	Product Spilled: <input type="checkbox"/> Potential Spill	Quantity in Litres, Kilograms or Cubic Metres:	U.N. Number:		
I	Spill Source:	Spill Cause:	Area of Contamination in Square Metres:		
J	Factors Affecting Spill or Recovery:	Describe Any Assistance Required:	Hazards to Persons, Property or Environment:		
K	Additional Information, Comments, Actions Proposed or Taken to Contain, Recover or Dispose of Spilled Product and Contaminated Materials:				
L	Reported to Spill Line by:	Position:	Employer:	Location Calling From:	Telephone:
M	Any Alternate Contact:	Position:	Employer:	Alternate Contact Location:	Alternate Telephone:

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:
Lead Agency: <input type="checkbox"/> EC <input type="checkbox"/> CCG/TCMSS <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> AANDC <input type="checkbox"/> NEB <input type="checkbox"/> Other: _____			Significance: <input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Unknown		File Status: <input type="checkbox"/> Open <input type="checkbox"/> Closed
Agency:		Contact Name:		Contact Time:	
Lead Agency:					
First Support Agency:					
Second Support Agency:					
Third Support Agency:					
Remarks:					



PENRAY PENCOOL® 3000 COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 04/11/2014

Revision date: 04/11/2014

Version: 1.0

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

1.1. Product identifier

Product name : PENRAY PENCOOL 3000 COOLING SYSTEM TREATMENT
Product code : 300016

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

Use of the substance/mixture : Cooling System Treatment.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
60090 Wheeling, IL
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye irritation 2A
Skin sensitization 1
Reproductive toxicity 2

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child.

Precautionary statements (GHS-US) :

Wash hands thoroughly after handling. Avoid breathing gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

5 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Boric acid (HBO ₂), sodium salt, tetrahydrate	(CAS No) 10555-76-7	5 – 10	Eye Irrit. 2A Repr. 2
Sodium nitrite	(CAS No) 7632-00-0	3 – 7	Ox. Sol. 3 Acute Tox. 3 (Oral) Eye Irrit. 2A

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Name	Product identifier	%	GHS-US classification
Sodium silicate	(CAS No) 1344-09-8	1 – 2	Acute Tox. 4 (Oral) Skin Irrit. 2 Eye Dam. 1 STOT SE 3
Sodium nitrate	(CAS No) 7631-99-4	0.5 – 1.5	Ox. Sol. 3 Acute Tox. 4 (Oral) Eye Irrit. 2A
Sodium mercaptobenzothiazole	(CAS No) 2492-26-4	< 0.5	Met. Corr. 1 Skin Corr. 1C Eye Dam. 1 Skin Sens. 1
Methanol	(CAS No) 67-56-1	< 0.1	Flam. Liq. 2 Acute Tox. 3 (Oral, Dermal, Inhalation) Eye Irrit. 2B STOT SE 1
Phenolphthalein	(CAS No) 77-09-8	< 0.1	Muta. 2 Carc. 2 Repr. 2

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitisation by skin contact.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Treat for surrounding material.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/fumes/vapor/spray. Handle and open container with care. When using do not eat, drink or smoke.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store locked up.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methanol (67-56-1)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA ACGIH	ACGIH STEL (ppm)	250 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm

8.2. Exposure controls

- Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear chemically resistant protective gloves.
- Eye protection : Safety glasses or goggles are recommended when using product.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
- Environmental exposure controls : Maintain levels below Community environmental protection thresholds.
- Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear.
- Colour : Pink.
- Odour : Odorless.
- Odour threshold : No data available.
- pH : < 11.5
- Relative evaporation rate (butylacetate=1) : No data available.
- Melting point : No data available.
- Freezing point : No data available.
- Boiling point : 100 - 102 °C (212 - 215 °F)
- Flash point : None.
- Self ignition temperature : No data available.
- Decomposition temperature : No data available.
- Flammability (solid, gas) : Not flammable.
- Vapour pressure : No data available.
- Relative vapour density at 20 °C : No data available.
- Relative density : 1.095 - 1.131
- Solubility : No data available.
- Log Pow : No data available.
- Log Kow : No data available.
- Viscosity, kinematic : No data available.
- Viscosity, dynamic : No data available.
- Explosive properties : No data available.

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

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according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Oxidising properties : No data available.
Explosive limits : No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials.

10.5. Incompatible materials

Acids. Organic material. Strong reducing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

300016

LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 20 mg/l/4h

Sodium nitrite (7632-00-0)

LD50 oral rat	180 mg/kg
LC50 inhalation rat (mg/l)	5.5 mg/l/4h

Sodium silicate (1344-09-8)

LD50 oral rat	1153 mg/kg
LD50 dermal rabbit	> 4640 mg/kg

Sodium nitrate (7631-99-4)

LD50 oral rat	1267 mg/kg
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Sodium mercaptobenzothiazole (2492-26-4)

LD50 oral rat	2100 mg/kg
LD50 dermal rabbit	> 7940 mg/kg

Methanol (67-56-1)

LD50 oral rat	5628 mg/kg
LD50 dermal rabbit	15800 mg/kg
LC50 inhalation rat (mg/l)	83.2 mg/l/4h

Phenolphthalein (77-09-8)

LD50 oral rat	> 2000 mg/kg
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Skin corrosion/irritation : Based on available data, the classification criteria are not met.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Based on available data, the classification criteria are not met.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure) : Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure) : Based on available data, the classification criteria are not met.
Aspiration hazard : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory irritation.

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Symptoms/injuries after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitisation by skin contact.
Symptoms/injuries after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology – general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

300016

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

300016

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium nitrite (7632-00-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

EPA TSCA Regulatory Flag	S - S - indicates a substance that is identified in a proposed or final Significant New Uses Rule.
SARA Section 313 - Emission Reporting	1.0 %

Sodium silicate (1344-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium nitrate (7631-99-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium mercaptobenzothiazole (2492-26-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting	1.0 %
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Phenolphthalein (77-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting	0.1 %
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15.2. US State regulations

300016

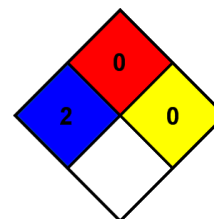
State or local regulations	This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
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SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes	: None.
Date of issue	: 04/11/2014
Other information	: None.
NFPA health hazard	: 2
NFPA fire hazard	: 0
NFPA reactivity	: 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



PENRAY PENCOOL® 3000 COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 04/11/2014

Revision date: 04/11/2014

Version: 1.0

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

1.1. Product identifier

Product name : PENRAY PENCOOL 3000 COOLING SYSTEM TREATMENT
Product code : 300064

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

Use of the substance/mixture : Cooling System Treatment.

1.3. Details of the supplier of the safety data sheet

The Penray Companies, Inc.
440 Denniston Ct.
60090 Wheeling, IL
T (800) 373-6729
rotto@penray.com

1.4. Emergency telephone number

Emergency number : (800) 373-6729
CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye irritation 2A
Skin sensitization 1
Reproductive toxicity 2

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child.

Precautionary statements (GHS-US) :

Wash hands thoroughly after handling. Avoid breathing gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

5 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Boric acid (HBO ₂), sodium salt, tetrahydrate	(CAS No) 10555-76-7	5 – 10	Eye Irrit. 2A Repr. 2
Sodium nitrite	(CAS No) 7632-00-0	3 – 7	Ox. Sol. 3 Acute Tox. 3 (Oral) Eye Irrit. 2A

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Name	Product identifier	%	GHS-US classification
Sodium silicate	(CAS No) 1344-09-8	1 – 2	Acute Tox. 4 (Oral) Skin Irrit. 2 Eye Dam. 1 STOT SE 3
Sodium nitrate	(CAS No) 7631-99-4	0.5 – 1.5	Ox. Sol. 3 Acute Tox. 4 (Oral) Eye Irrit. 2A
Sodium mercaptobenzothiazole	(CAS No) 2492-26-4	< 0.5	Met. Corr. 1 Skin Corr. 1C Eye Dam. 1 Skin Sens. 1
Methanol	(CAS No) 67-56-1	< 0.1	Flam. Liq. 2 Acute Tox. 3 (Oral, Dermal, Inhalation) Eye Irrit. 2B STOT SE 1
Phenolphthalein	(CAS No) 77-09-8	< 0.1	Muta. 2 Carc. 2 Repr. 2

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

- Symptoms/injuries after inhalation : May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitisation by skin contact.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Treat for surrounding material.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon, oxides of nitrogen.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

PENRAY PENCOOL® 3000

COOLING SYSTEM TREATMENT

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin and eyes. Do not swallow. Avoid breathing gas/fumes/vapor/spray. Handle and open container with care. When using do not eat, drink or smoke.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store locked up.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methanol (67-56-1)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA ACGIH	ACGIH STEL (ppm)	250 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm

8.2. Exposure controls

- Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
- Personal protective equipment : Avoid all unnecessary exposure.
- Hand protection : Wear chemically resistant protective gloves.
- Eye protection : Safety glasses or goggles are recommended when using product.
- Skin and body protection : Wear suitable protective clothing.
- Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
- Environmental exposure controls : Maintain levels below Community environmental protection thresholds.
- Other information : Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Clear.
- Colour : Pink.
- Odour : Odorless.
- Odour threshold : No data available.
- pH : < 11.5
- Relative evaporation rate (butylacetate=1) : No data available.
- Melting point : No data available.
- Freezing point : No data available.
- Boiling point : 100 - 102 °C (212 - 215 °F)
- Flash point : None.
- Self ignition temperature : No data available.
- Decomposition temperature : No data available.
- Flammability (solid, gas) : Not flammable.
- Vapour pressure : No data available.
- Relative vapour density at 20 °C : No data available.
- Relative density : 1.095 - 1.131
- Solubility : No data available.
- Log Pow : No data available.
- Log Kow : No data available.
- Viscosity, kinematic : No data available.
- Viscosity, dynamic : No data available.
- Explosive properties : No data available.

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according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Oxidising properties : No data available.
Explosive limits : No data available.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials.

10.5. Incompatible materials

Acids. Organic material. Strong reducing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon, oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

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LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 20 mg/l/4h

Sodium nitrite (7632-00-0)

LD50 oral rat	180 mg/kg
LC50 inhalation rat (mg/l)	5.5 mg/l/4h

Sodium silicate (1344-09-8)

LD50 oral rat	1153 mg/kg
LD50 dermal rabbit	> 4640 mg/kg

Sodium nitrate (7631-99-4)

LD50 oral rat	1267 mg/kg
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Sodium mercaptobenzothiazole (2492-26-4)

LD50 oral rat	2100 mg/kg
LD50 dermal rabbit	> 7940 mg/kg

Methanol (67-56-1)

LD50 oral rat	5628 mg/kg
LD50 dermal rabbit	15800 mg/kg
LC50 inhalation rat (mg/l)	83.2 mg/l/4h

Phenolphthalein (77-09-8)

LD50 oral rat	> 2000 mg/kg
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Skin corrosion/irritation : Based on available data, the classification criteria are not met.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : Based on available data, the classification criteria are not met.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure) : Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure) : Based on available data, the classification criteria are not met.
Aspiration hazard : Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation : May cause respiratory irritation.

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according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Symptoms/injuries after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitisation by skin contact.
Symptoms/injuries after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology – general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

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Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

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Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium nitrite (7632-00-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

EPA TSCA Regulatory Flag	S - S - indicates a substance that is identified in a proposed or final Significant New Uses Rule.
SARA Section 313 - Emission Reporting	1.0 %

Sodium silicate (1344-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium nitrate (7631-99-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium mercaptobenzothiazole (2492-26-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting	1.0 %
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Phenolphthalein (77-09-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting	0.1 %
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15.2. US State regulations

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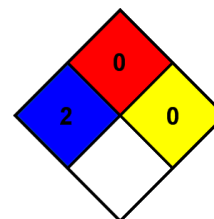
State or local regulations	This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
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SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

IARC	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes	: None.
Date of issue	: 04/11/2014
Other information	: None.
NFPA health hazard	: 2
NFPA fire hazard	: 0
NFPA reactivity	: 0



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product