MSDS Material Safety Data Sheet
THE PENRAY COMPANIES, INC.

PENRAY 2 STEP COOLING SYSTEM RE-CHARGE KIT 1102
MSDS Number: 1102
Revision Date: 03/11/2009

Page 1 of 3

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer
THE PENRAY COMPANIES INC.
440 Denniston Ct
Wheeling, IL 60090

Contact: EH&S Manager
Telephone Number: (847) 459-5000
FAX Number: (847) 459-5043
E-Mail: www.penray.com

Product Name: PENRAY 2 STEP COOLING SYSTEM RE-CHARGE KIT 1102
Revision Date: 03/11/2009
MSDS Number: 1102
Common Name: 2 STEP OF COOLING SYSTEM CLEANER AND COOLING SYSTEM TREATMENT

2 HAZARDS IDENTIFICATION

Route of Entry:
Target Organs:
Inhalation:
Skin Contact:
Eye Contact:
Ingestion:

3 COMPOSITION/INFORMATION ON INGREDIENTS

THIS 2 STEP COOLING SYSTEM RE-CHARGE KIT CONSISTS OF TWO PRODUCTS, PENRAY COOL PREP COOLING SYSTEM CLEANER 1212 AND PENRAY COOL-TEC 2 COOLING SYSTEM TREATMENT 1112.

PLEASE REFER TO THE INDIVIDUAL MSDS'S FOR DETAILED INFORMATION

4 FIRST AID MEASURES

Inhalation:
Skin Contact:
Eye Contact:
Ingestion:
5 FIRE FIGHTING MEASURES

6 ACCIDENTAL RELEASE MEASURES

7 HANDLING AND STORAGE

Handling Precautions:
Storage Requirements:

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:
Protective Equipment:

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Physical State:
Odor:
pH:
Vapor Pressure:
Vapor Density:
Boiling Point:
Freezing/Melting Pt.:
Solubility:
Spec Grav./Density:

10 STABILITY AND REACTIVITY

Stability:
Conditions to avoid:
Materials to avoid (incompatibility):
Hazardous Decomposition products:
Hazardous Polymerization:

11 TOXICOLOGICAL INFORMATION
END OF MSDS DOCUMENT
1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer:
THE PENRAY COMPANIES INC.
440 Denniston Ct
Wheeling, IL 60090

Contact: EH&S Manager
Telephone Number: (847) 459-5000
FAX Number: (847) 459-5043
E-Mail: Web

Product Name: PENRAY COOL TECH-2 1112
Revision Date: 03/11/2009
MSDS Number: 1112
Common Name: AN AQUEOUS SOLUTION OF NITRITES, NITRATES AND SODIUM TETRABORATE

EMERGENCY PHONE NUMBER (600) 752-7889

NFPA 704M RATING:
HEALTH: 1  FIRE: 0  REACTIVITY: 0  SPECIAL:
0=INSIGNIFICANT 1=SLIGHT 2=MEDIUM 3=HIGH 4=EXTREME

2 HAZARDS IDENTIFICATION

Route of Entry: Skin absorption, inhalation, eye contact, ingestion
Target Organs: None Known
Inhalation: No hazard in industrial use.
Skin Contact: Prolonged contact with skin can cause irritation.
Eye Contact: Will cause irritation upon contact.
Ingestion: Irritating to mouth, throat, and stomach. May cause discomfort, nausea, vomiting and diarrhea.

CARCINOGENICITY: Product is not considered a carcinogen by OSHA, NTP or IARC.
MEDICAL CONDITIONS: Pre-existing eye or skin conditions may be aggravated by over-exposure to this product.

3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NUMBER</th>
<th>PERCENT WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM NITRITE</td>
<td>7632-00-0</td>
<td>1-3%</td>
</tr>
<tr>
<td>SODIUM METASILICATE</td>
<td>6834-92-0</td>
<td>0.5-2.5%</td>
</tr>
<tr>
<td>SODIUM TETRABORATE</td>
<td>1330-43-4</td>
<td>1-2%</td>
</tr>
<tr>
<td>SODIUM NITRATE</td>
<td>7631-99-4</td>
<td>0.1-0.5%</td>
</tr>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>1310-73-2</td>
<td>0.5-2%</td>
</tr>
<tr>
<td>SODIUM TOLYTRIAZOLE</td>
<td>64665-57-2</td>
<td>0.5-2.0%</td>
</tr>
<tr>
<td>WATER</td>
<td>6771-18-5</td>
<td>&gt;90%</td>
</tr>
</tbody>
</table>
**FIRST AID MEASURES**

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. Seek medical attention. Inhalation hazard unlikely due to low volatility of product.

**Skin Contact:** Wash area with soap and water. Seek medical attention if irritation persists.

**Eye Contact:** Immediately flush eyes with plenty of water for 15 minutes. Seek medical attention.

**Ingestion:** Incite vomiting. Only give CONSCIOUS victim two glasses of water and seek medical attention. NEVER give unconscious anything by mouth.

**FIRE FIGHTING MEASURES**

**Flash Point:** N/A

Product will not support combustion.

**ACCIDENTAL RELEASE MEASURES**

**SPILL/LEAK PROCEDURES:** Notify safety personnel evacuate all unnecessary personnel and provide adequate ventilation. If feasible, and without risk, clean-up personnel should stop leak. All clean-up personnel should wear proper personal protective equipment.

**SMALL SPILLS:** Clean with inert absorbent and place in recovery drums for disposal.

**LARGE SPILLS:** Dike to prevent further migration of material. DO NOT release into waterways or sewers. Follow applicable federal and state regulations.

**HANCLING AND STORAGE**

**Handling Precautions:** Wash thoroughly after handling. Do not get into eyes, on skin or on clothing. Do not smoke while using this product. Do not use near excessive heat, sparks, or open flame.

**Storage Requirements:** Store in clean, dry locations away from excessive heat.

**EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls:** Eye wash station and safety shower.

**Protective Equipment:**
- **EYE:** Chemical splash goggles with indirect or no ventilation.
- **SKIN:** Chemical resistant gloves such as nitrile.
- **RESPIRATORY:** Organic vapor air purifying respirator if vapors are a nuisance or if the concentrations are above PEL or TLV.

Never eat, drink or smoke in the work area.

**Exposure Guidelines/Other:** Never eat, drink or smoke in work area.
9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid
Physical State: Liquid
Odor: None
pH: 12.0
Vapor Pressure: 
Vapor Density: >1
Boiling Point: BT 212 - 215 F
Freezing/Melting Pt.: 
Solubility: Completely
Spec Grav./Density: 1.3

10 STABILITY AND REACTIVITY

Stability: Material is stable.
Conditions to avoid: Excessive heat and open flame.
Materials to avoid (incompatibility): Strong oxidizing agents and reducing agents
Hazardous Decomposition products: Carbon Monoxide and Carbon Dioxide
Hazardous Polymerization: Cannot occur.

11 TOXICOLOGICAL INFORMATION

LD50
Sodium Nitrite: 120 mg/kg (oral)
Sodium Nitrate: 4300 mg/kg (oral)
Sodium Tetraborate: 3230 mg/kg (oral)

12 ECOLOGICAL INFORMATION

No data

13 DISPOSAL CONSIDERATIONS

As a waste, this product in its raw form DOES NOT MEET the criteria of a hazardous waste as defined by RCRA (40CFR361). Dispose of in accordance with all applicable state, federal and local regulations.
14 TRANSPORT INFORMATION

DOMESTIC:
Not Regulated

EXPORT:
Not Regulated

15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS
OSHA: Considered to be a hazardous material as defined by 29CFR1910.1200

EPA SARA TITLE III

Section 311-312 (40CFR370): If stored in excess of the threshold quantities, this
product should be reported as a(n):
IMMEDIATE (acute) HEALTH HAZARD

Section 313(40CFR372) This product does not contains ingredients which are subject to the
reporting requirements of SARA 313:

16 OTHER INFORMATION

CALIFORNIA PROPOSITION 65: This product does not contain ingredients which are on the current
Proposition 65 list.

NEW JERSEY RIGHT-TO-KNOW: This product contains the following ingredients which are non-hazardous, but
are among the top five ingredients in this product:

7732-18-5: Water
7631-99-4: Sodium Nitrite
7631-00-0: Sodium Nitrate
1330-43-4: Sodium Tetrasulfate

Notes:
NO= NOT GIVEN
BT= BETWEEN
<= LESS THAN
>= GREATER THAN

USER'S RESPONSIBILITY: This MSDS provides environmental, health and safety information. This product is to be used in applications
consistent with our product literature and container label. Individuals handling this product should be informed of the recommended safety
precautions and have access to this MSDS. Please contact your local sales representative at our EH&S Department for further information.

END OF MSDS

END OF MSDS DOCUMENT
# 1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer
THE PENRAY COMPANIES INC.
440 Denniston Ct
Wheeling, IL 60090

Contact: EH&S Manager
Phone: (847) 459-5000
Fax: (847)459-5043

---

# 2 HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Route of Entry:</th>
<th>Skin absorption, inhalation, eye contact, ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Organs:</td>
<td>None Known</td>
</tr>
<tr>
<td>Inhalation:</td>
<td>No hazard in industrial use.</td>
</tr>
<tr>
<td>Skin Contact:</td>
<td>Prolonged contact with skin can cause irritation.</td>
</tr>
<tr>
<td>Eye Contact:</td>
<td>Will cause irritation upon contact.</td>
</tr>
<tr>
<td>Ingestion:</td>
<td>Irritating to mouth, throat, and stomach. May cause discomfort, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

CARCINOGENICITY: Product is not considered a carcinogen by OSHA, NTP or IARC.
MEDICAL CONDITIONS: Pre-existing eye or skin conditions may be aggravated by over-exposure to this product.
### COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Percent Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM NITRITE</td>
<td>7632-00-0</td>
<td>1-5%</td>
</tr>
<tr>
<td>SODIUM TETRABORATE</td>
<td>1330-43-4</td>
<td>1-5%</td>
</tr>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>1310-73-2</td>
<td>1-5%</td>
</tr>
<tr>
<td>SODIUM TOLYTRIAZOLE</td>
<td>64665-57-2</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

### FIRST AID MEASURES

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. Seek medical attention. Inhalation hazard unlikely due to low volatility of product.

**Skin Contact:** Wash area with soap and water. Seek medical attention if irritation persists.

**Eye Contact:** Immediately flush eyes with plenty of water for 15 minutes. Seek medical attention.

**Ingestion:** Induce vomiting. Only give CONSCIOUS victim two glasses of water and seek medical attention. NEVER give UNCONSCIOUS anything by mouth.

### FIRE FIGHTING MEASURES

**Flash Point:** DOES NOT FLASH

Product will not support combustion

### ACCIDENTAL RELEASE MEASURES

**SPILL/LEAK PROCEDURES:** Notify safety personnel evacuate all unnecessary personnel and provide adequate ventilation. If feasible, and without risk, clean-up personnel should stop leak. All clean-up personnel should wear proper personal protective equipment.

LARGE SPILLS: Like to prevent further migration of material. DO NOT release into waterways or sewers. Follow applicable federal and state regulations.

### HANDLING AND STORAGE

**Handling Precautions:** Wash thoroughly after handling. Do not get into eyes, on skin or on clothing. Do not smoke while using this product. Do not use near excessive heat, sparks, or open flame.

**Storage Requirements:** Store in clean, dry locations away from excessive heat.
8  EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Eye wash station and safety shower.
Strong general ventilation or local exhaust.

Personal Protective Equip:
EYE: Chemical splash goggles with indirect or no ventilation.
SKIN: Chemical resistant gloves such as nitrile.
RESPIRATORY: Organic vapor air purifying respirator if vapors are a nuisance or if the concentrations are above PEL or TLV.
Never eat, drink or smoke in the work area.

Never eat, drink or smoke in work area

9  PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Purple liquid
Physical State: Liquid
Spec Grav./Density: 1.3
Boiling Point: BT 212 - 215 F
pH: 12.0
Odor: None
Solubility: Completely
Vapor Density: >1

10  STABILITY AND REACTIVITY

Stability: Material is stable.
Conditions to Avoid: Excessive heat and open flame.
Materials to Avoid: Strong oxidizing agents and reducing agents
Hazardous Decomposition: Carbon Monoxide and Carbon Dioxide
Hazardous Polymerization: Cannot occur.

11  TOXICOLOGICAL INFORMATION

LD50
Sodium Nitrite: 120 mg/kg (oral)
Sodium Nitrate: 4300mg/kg (oral)
Sodium Tetraborate: 3200 mg/kg (oral)
12 ECOLOGICAL INFORMATION
No data

13 DISPOSAL CONSIDERATIONS
As a waste, this product in its raw form DOES NOT MEET the criteria of a hazardous waste as defined by RCRA (40CFR361). Dispose of in accordance with all applicable state, federal and local regulations.

14 TRANSPORT INFORMATION
DOMESTIC: Not Regulated
EXPORT: Not Regulated

15 REGULATORY INFORMATION
U.S. FEDERAL REGULATIONS
OSHA: Considered to be a hazardous material as defined by 29CFR1910.1200

EPA SARA TITLE III
Section 311-312 (40CFR370): If stored in excess of the threshold quantities, this product should be reported as a(n): IMMEDIATE (acute) HEALTH HAZARD

Section 313(40CFR372) This product does not contains ingredients which are subject to the reporting requirements of SARA 313:
CALIFORNIA PROPOSITION 65: This product does not contain ingredients which are on the current Proposition 65 list.

NEW JERSEY RIGHT-TO-KNOW: This product contains the following ingredients which are non-hazardous, but are among the top five ingredients in this product:

******CAS#******
7732-10-5: Water

Notes:
NG= NOT GIVEN
BT= BETWEEN
<= LESS THAN
>= GREATER THAN

USERS RESPONSIBILITY: This MSDS provides environmental, health and safety information. This product is to be used in applications consistent with our product literature and container label. Individuals handling this product should be informed to the recommended safety precautions and have access to this MSDS. Please contact your local sales representative at our EH&S Department for further information.

END OF MSDS