MATERIAL SAFETY DATA SHEET

Taylor Pharmaceuticals
942 Calle Negocio, Suite 150
San Clemente, CA 92673

EMERGENCY TELEPHONE: 800-223-9851

COMMON NAME: Cyanide Antidote Package

DATE: April 25, 1997

COMPONENT COMMON NAMES:

Amyl Nitrite Inhalant
Sodium Nitrite Injection
Sodium Thiosulfate Injection

MATERIAL SAFETY DATA SHEETS FOR THE COMPONENTS ARE ATTACHED
MATERIAL SAFETY DATA SHEET

Taylor Pharmaceuticals
942 Calle Negocio, Suite 150
San Clemente, CA 92673

EMERGENCY TELEPHONE: 800-223-5851

COMMON NAME: Amyl Nitrite Inhalant
DATE: April 25, 1997

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. However, this safety data sheet does not constitute a warranty of any kind, express or implied. In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

See attached glossary for abbreviations.

THIS MATERIAL IS A COMPONENT OF THE CYANIDE ANTIDOTE PACKAGE.

SECTION 1 - MATERIAL IDENTIFICATION

Common Name: Amyl Nitrite Inhalant

Chemical Name: Nitric oxide, 3-methylbutyl ester; Benzenamine, N-phenyl

Synonyms/Trade Names: Cyanide Antidote Kit; Amyl Nitrite

Mixture Ingredients Listed Below:

<table>
<thead>
<tr>
<th>Common or Chemical Name</th>
<th>Synonyms/Trade Names</th>
<th>CAS Number</th>
<th>Percent in Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amyl Nitrite</td>
<td>Isoamyl nitrite</td>
<td>110-46-3</td>
<td>98</td>
</tr>
<tr>
<td>Diphenylamine</td>
<td>N-Phenylaminilne</td>
<td>122-39-4</td>
<td>2</td>
</tr>
</tbody>
</table>
Amyl Nitrite Inhalant MSDS
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Incompatibility: Reacts violently with reducing materials.

Hazardous Decomposition: May emit toxic fumes when heated to decomposition.

Hazardous Polymerization: Not known to occur.

SECTION 5 - HEALTH HAZARD INFORMATION

Human - Occupational

Effects, Including Signs and Symptoms, of Exposure: The components may produce signs and symptoms as indicated:

Amyl Nitrite - Headaches have been reported from occupational exposure. May cause irritation to the eyes, skin, and mucous membranes. Excessive doses can induce methemoglobinemia (reduction in oxygen available to the body) and can cause death. Symptoms of excessive methemoglobinemia are blue skin and mucous membranes, vomiting, shock, and coma. Other effects following acute exposure may include flushing of face, pulsating headache, tachycardia, vasodilation, and increased intraocular pressure. Amyl nitrite is absorbed through the skin. The amounts found in a single inhalant are not excessive for an adult.

Diphenylamine - Effects of exposure to diphenylamine may include skin rash, increased blood pressure, increased heart rate, bladder symptoms and methemoglobin formation. Diphenylamine may also cause irritation to the eyes and respiratory tract.

Medical Conditions Aggravated by Exposure: None known.

Primary Route(s) of Entry: Inhalation and skin absorption.

Exposure Guidelines: Amyl Nitrite Inhalant - PEL and TLV not established. Amyl nitrite - PEL and TLV not established. Diphenylamine - TLV 2 ppm (10 mg/m3) TWA PEL 2 ppm (10 mg/m3) TWA
Contains no hazardous components (one percent or greater) or carcinogens (one-tenth percent or greater) not listed above.

**Appearance:**
Glass sealed container wrapped by single gray thread woven spirally over a braided white cotton mesh pad which is impregnated with the clear yellowish liquid

**Odor:**
Ethereal fruity

**Boiling Point:**
97°C (207°F)

**Melting Point:**
NA/F

**Specific Gravity:**
0.872

**pH:**
NA/F

**Evaporation Rate:**
Highly volatile

**Solubility in Water:**
Slightly soluble

**Vapor Density:**
4.0

**Vapor Pressure:**
NA/F

**SECTION 3 - FIRE AND EXPLOSION INFORMATION**

**Extinguishing Media:**
Use water, carbon dioxide, dry chemical, foam, or Halon.

**Unusual Fire and Explosion Hazards:**
Extremely flammable. Flash point below 22.8°C (73°F). Vapor-air mixtures are explosive. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.

**Flash Point:**
10°C (50°F)  **Method:**
NA/F  **UEL:** NA/F  **LEL:** NA/F

**SECTION 4 - REACTIVITY INFORMATION**

**Stability:**
Self-reactive. Vapors may explode when heated.
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**Animal Toxicity Data Single Exposure:**

No data available for Amyl Nitrite Inhalant. Toxicity data for components are presented.

**Oral:**  Amyl nitrite - rat, median lethal dose, 505 mg/kg.
Diphenylamine - rat, median lethal dose 2000 mg/kg.

**Skin:**  Amyl nitrite - NAIF
Diphenylamine - rabbit, median lethal dose greater than 5 g/kg.

**Inhalation:**  Amyl nitrite - rat, median lethal concentration 1274 ppm for 1 hour.
Diphenylamine - NAIF

**Skin Contact:**  Amyl nitrite - NAIF
Diphenylamine - rabbit, nonirritant

**Eye Contact:**  Amyl nitrite - NAIF
Diphenylamine - NAIF

**Animal Toxicity Data Repeat Exposure:**

No data available for Amyl Nitrite Inhalant. Toxicity data for components are presented.

**Target Organ Effects:**  Amyl nitrite - Blood effects (converts hemoglobin to methemoglobin), circulatory effects (vasodilation).
Diphenylamine - Liver and spleen effects, kidney effects (cystic kidney disease).

**Reproduction:**  Amyl nitrite - NAIF
Diphenylamine - Reproductive effects (reduced litter size).
Developmental effects (renal cystic disease).

**Sensitization:**  Amyl nitrite - NAIF
Diphenylamine - NAIF

**Mutagenicity:**  Amyl nitrite - NAIF
Diphenylamine - NAIF
Carcinogenicity: No carcinogenicity data found. Not listed as carcinogenic by IARC, NCI/NTTP, ACGIH, or OSHA. Nitrites can be converted to nitrosamines in the intestines of many animals and man. While nitrosamines are potent animal carcinogens, studies with nitrites have not produced a clear carcinogenic response.

SECTION 6 - EMERGENCY AND FIRST AID PROCEDURES

Eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See an ophthalmologist (eye doctor) or other physician immediately.

Skin: Remove contaminated clothing and clean before reuse. Wash all exposed areas of skin with plenty of soap and water. Get medical attention if irritation develops.

Inhalation: Move individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, provide artificial respiration assistance (mouth-to-mouth) and call a physician immediately.

Ingestion: Do not induce vomiting. Call a physician or poison control center. If available, administer activated charcoal (5-8 heaping teaspoons) with two to three glasses of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

Note to Physician: If excessive exposure occurs and methemoglobinemia is suspected, administer oxygen. A 1% methylene blue solution may be given intravenously for treatment of excessive methemoglobinemia. Transfusion of whole blood may be considered.

SECTION 7 - HANDLING PRECAUTIONS

Under normal use and handling conditions, no protective equipment is required. The following is recommended for a production setting:

Respiratory Protection: Use an approved respirator.
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Eye Protection: Chemical goggles and/or face shield.

Ventilation: Laboratory fume hood or local exhaust ventilation.

Other Protective Equipment: Chemical-resistant gloves and body covering to minimize skin contact. If handled in a ventilated enclosure, as in a laboratory setting, respirator and goggles or face shield may not be required. Safety glasses are always required.

Other Handling Precautions: In production settings, airline-supplied hood-type respirators are preferred. Shower and change clothing if skin contact occurs.

SECTION 8 - SPILL, LEAK AND DISPOSAL PROCEDURES

Spills: Prevent further migration into the environment. Use absorbent/adsorbent material to solidify liquids. Solidification may not suppress vapors. Do not vacuum. Avoid any source of ignition. Wear protective equipment, including eye protection, to avoid exposure (see Section 7 for specific handling precautions).

Waste Disposal: Dispose of any cleanup materials and waste residue according to applicable federal, state, and local regulations.

SECTION 9 - SHIPPING INFORMATION

(Proper Shipping Name / Hazard Class / UN Number)

DOT: Amyl nitrates / 3 / UN1113
ICAO: Amyl nitrates / 3 / UN1113
IMO: Amyl nitrates / 3.2 / UN1113
Packing Group: II
MATERIAL SAFETY DATA SHEET

Taylor Pharmaceuticals
942 Calle Negocio, Suite 150
San Clemente, CA 92673

EMERGENCY TELEPHONE: 714-492-4030

COMMON NAME: Sodium Nitrite Injection

DATE: April 25, 1997

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered with the good faith belief that it is accurate. However, this safety data sheet does not constitute a warranty of any kind, express or implied. In the event of an adverse incident associated with this material, this safety data sheet is not intended to be a substitute for consultation with appropriately trained personnel. Nor is this safety data sheet intended to be a substitute for product literature which may accompany the finished product.

See attached glossary for abbreviations.

This material is a component of the Cyanide Antidote Package

SECTION 1 - MATERIAL IDENTIFICATION

Common Name: Sodium Nitrite Injection, USP

Chemical Name: Sodium Nitrite

Mixture Ingredients Listed Below:

<table>
<thead>
<tr>
<th>Common or Chemical Name</th>
<th>Synonyms/Trade Names</th>
<th>CAS Number</th>
<th>Percent in Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>Diazotizing Salts</td>
<td>7632-00-0</td>
<td>30.6 mg</td>
</tr>
<tr>
<td>Water for injection</td>
<td>H2O</td>
<td>7732-18-5</td>
<td>&lt;1.0 ml</td>
</tr>
</tbody>
</table>

Contains no hazardous components (one percent or greater) or carcinogens (one-tenth percent or greater) not listed above.
SECTION 2 - PHYSICAL DATA
Appearance: Clear, colorless to slightly yellow aqueous solution
Odor: None
Evaporation Rate: NA
Boiling Point: 102°C-104°C
Solubility in Water: Miscible
Melting Point: NA
Vapor Density: NA
Specific Gravity: NA
pH: 7.0-9.0
Vapor Pressure: NA

SECTION 3 - FIRE AND EXPLOSION INFORMATION
Extinguishing Media: Use water, CO₂, dry chemical, foam, or Halon.
Unusual Fire and Explosion Hazards: None known.
Flash Point: NA
Method: NA UEL: NA LEL: NA

SECTION 4 - REACTIVITY INFORMATION
Stability: Stable at room temperature.
Incompatibility: Hazardous reaction can occur with acids, ammonia compounds, reducing agents particularly cyanides, thio cyanates, and organics.

Hazardous Decomposition: May emit toxic fumes when heated to decomposition.
Hazardous Polymerization: Does not occur.

SECTION 5 - HEALTH HAZARD INFORMATION
HUMAN - OCCUPATIONAL
Effects, Including Signs and Symptoms, of Exposure: May cause ocular and dermal irritation if direct exposure occurs. Excessive doses of sodium nitrite induce dangerous methemoglobinemia and can cause death. The amounts found in a single Cyanide Antidote Package are not excessive for an adult. The doses for children should be calculated on a surface area or on a weight basis with dosage adjusted so that excessive methemoglobin is not formed. Symptoms of excessive methemoglobinemia are blue skin and mucous membranes, vomiting, shock, and coma.
SODIUM NITRITE INJECTION MSDS
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Medical Conditions Aggravated by Exposure: None known.
Primary Route(s) of Entry: Skin absorption.
Exposure Guidelines: Not established.

HUMAN - CLINICAL

Adverse Reactions: None known.

ANIMAL TOXICITY DATA SINGLE EXPOSURE (SODIUM NITRITE):

Oral: Rat, median lethal dose, 85 mg/kg.
Skin: NAIF
Inhalation: NAIF
Intravenous: Dog, 30 mg/kg, methemoglobinemia.
Skin Contact: Rabbit, irritant
Eye Contact: Rabbit, irritant

ANIMAL TOXICITY DATA REPEAT EXPOSURE (SODIUM NITRITE):

Target Organ Effects: Methemoglobin former, skin/appendage, liver and gastrointestinal tumors.
Reproduction/Teratology: Teratogenic.
Sensitization: NAIF
Mutagenicity: Positive in bacterial cells and negative in mammalian cells.

Carcinogenicity: Not listed as carcinogenic by IARC, NCI/NTDP, ACGIH, or OSHA. While not direct carcinogens, nitrates and nitriles are nitrosation compounds that in the stomach could contribute to the formation of nitrosamines. Nitrosamines are animal carcinogens. However, it is estimated that in our daily diet we safely ingest approximately 10 mg of nitrite.
SECTION 6 - EMERGENCY AND FIRST AID PROCEDURES

Eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See an ophthalmologist (eye doctor) or physician immediately.

Skin: Remove contaminated clothing and clean before reuse. Wash all exposed areas of skin with plenty of soap and water. Get medical attention if irritation develops or persists.

Inhalation: Move individual to fresh air. Get medical attention if breathing difficulty occurs. If not breathing, provide artificial respiration assistance (mouth-to-mouth) and call a physician immediately.

Ingestion: Do not induce vomiting. Call a physician or poison control center. If available, administer activated charcoal (6-8 heaping teaspoonfuls) with two to three glasses of water. Do not give anything by mouth to an unconscious person. Immediately transport to a medical care facility and see a physician.

NOTE TO PHYSICIAN: If substantial ingestion occurs and methemoglobinemia results, administer oxygen. A 1% methylene blue solution should be given intravenously for treatment of excessive methemoglobinemia. Transfusion of whole fresh blood should be considered.

SECTION 7 - HANDLING PRECAUTIONS

Respiratory Protection: Not normally required.

Eye Protection: Chemical splash goggles.

Ventilation: Laboratory fume hood and good local ventilation.

Other Protective Equipment: Impervious gloves and body covering to prevent skin contact.

Other Handling Precautions: Not normally required.
SECTION 8 - SPILL, LEAK AND DISPOSAL PROCEDURES

Spills: Prevent further migration into the environment. Use absorbent/adsorbent material to solidify liquids. Solidification may not suppress vapors. Vacuuming liquids or solidified material may disperse vapors. Wear protective equipment, including eye protection, to avoid exposure.

Waste Disposal: Dispose of any cleanup materials and waste residue according to applicable federal, state, and local regulations.

SECTION 9 - SHIPPING INFORMATION

(Proper Shipping Name / Hazard Class / UN Number)

DOT: Not regulated for surface transport.

ICAO: Not regulated for air transport.

IMCO: Not regulated for water transport.
GLOSSARY

(Abbreviations Used in Material Safety Data Sheets)

ACGIH: American Conference of Governmental Industrial Hygienists
BEL: Biological Exposure Limit
CAS Number: Chemical Abstract Service Registry Number
CERCLA: Comprehensive Environmental Response Compensation and Liability Act (of 1980)
CWA: Clean Water Act
DOT: Department of Transportation
EP: Extraction Procedure as defined under RCRA Regulations
EPA: Environmental Protection Agency
HEPA: High Efficiency Particulate Air (Filter)
HSDB: Hazardous Substance Database
IARC: The International Agency for Research on Cancer
ICAO: International Civil Aviation Organization
IMO: International Maritime Organization
LEL: Lower Explosive Limit
MSDS: Material Safety Data Sheet
NA: Not Applicable
NAIF: No Applicable Information Found
NC/NTTP: National Cancer Institute/National Toxicology Program
NIOSH: National Institute for Occupational Safety and Health
NOS: Not Otherwise Specified
OHS: Occupational Health Services
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PSN: Proper-Shipping Name
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average/8 Hours Unless Otherwise Noted
UEL: Upper Explosive Limit
UN: United Nations
MATERIAL SAFETY DATA SHEET

Taylor Pharmaceuticals
942 Calle Negocio, Suite 150
San Clemente, CA 92673

EMERGENCY TELEPHONE: 800-223-9851

PRODUCT NAME: Sodium Thiosulfate Injection

DATE: April 25, 1997

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See attached glossary for abbreviations.

This Material Is A Component Of The Cyanide Antidote Package.

SECTION I: IDENTITY

Common Name - Sodium Thiosulfate
Chemical Name - Sodium Thiosulfate
Chemical Family - Cyanide Poison Antidote
Chemical Formula - $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
CA#: No. - 10102177
RTf CS No. - WE6660000

SECTION II: HAZARDOUS INGREDIENTS/ACTIVE INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Thiosulfate</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

942 Calle Negocio • Suite 150 • P.O. Box 5136 • San Clemente, CA 92673-5136 • (714) 492-4030 • FAX (714) 498-3613
SECTION III: PHYSICAL & CHEMICAL CHARACTERISTICS

DESCRIPTION: Sodium Thiosulfate Injection, USP is a sterile, nonpyrogenic, solution of Sodium Thiosulfate pentahydrate in Water for Injection (pH 8.0 -9.5).

Appearance & Odor: Clear, colorless solution; odorless
Boiling Point: N/A
Solubility in Water: Soluble
Vapor Pressure: N/A
Vapor Density: N/A

SECTION IV: FIRE & EXPLOSION DATA

Flash Point: N/A
Extinguisher Media: Water spray, carbon dioxide, dry chemical, or foam as appropriate for surrounding fire and materials.
Flammable Limits - (LEL) - N/A (UEL) - N/A

Unusual Fire and Explosion Hazards - Emits toxic fumes.

Hazardous Decomposition Products - Sodium Thiosulfate emits toxic oxides of Sodium and Sulfur when heated to decomposition.

Special Fire Fighting Procedures - Firefighters should use self-contained breathing apparatus and protective clothing.

SECTION V: REACTIVITY DATA

Stability - Stable
Conditions/Materials to Avoid - Reacts violently with Sodium Nitrate, Potassium Nitrate, and Sodium Nitrite. Do not mix with other drugs.

Hazardous Polymerization - Will not occur
SECTION VII: STORAGE & HANDLING DATA

Precautions - As a general rule, when handling pharmaceutical products, avoid all contact and inhalation of dust, fumes, mists, and/or vapors associated with the product. Do not mix with other drugs.

SECTION IX: ACCIDENTAL SPILL PROCEDURES/WASTE DISPOSAL DATA

Containment/Clean-up - Wear recommended personal protective equipment. Vacuum spillage with a vacuum cleaner having a high efficiency particulate (HEPA) filter, or absorb liquid with paper towels. Wipe working surfaces to dryness, then wash with soap and water.

Waste Disposal - Though not EPA regulated, waste should be disposed of in accordance with federal, state, and local regulations. Do not mix with other substances.

NOTICE: The information contained herein is believed to be complete and accurate. However, it is the user's responsibility to determine the suitability of the information for his or her particular purpose. Pasadena Research Laboratories assumes no additional liability or responsibility resulting from the use of, or reliance on, this information.