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

1.1. Product identifier
Product form : Mixture
Trade name : Amyl Nitrite Inhalant USP

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture : Prescription drug used for treatment of angina pectoris
Use of the substance/mixture : For professional use only

1.3. Details of the supplier of the safety data sheet
James Alexander Corporation
845 Route 94 Blairstown
NJ 07825
Tel: (908) 362-9266

Note: The CHEMTREC emergency number is to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to JAC at (908) 362-9266.

1.4. Emergency telephone number
Emergency number : Chemtrec (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS-US classification
Flam. Liq. 2 H225
Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation:dust,mist) H332

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapour
H302 + H332 - Harmful if swallowed or if inhaled
Precautionary statements (GHS-US) :
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautions against static discharge
P244 - Avoid breathing dust, fume, gas, mist, spray, vapours
P245 - Wash hands thoroughly after handling
P246 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, protective clothing, protective gloves
P281 - Use respiratory protection if dust fume gas mist or vapour is generated
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
P303+P361+P353 - IF ON SKIN or hair: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P330 - If swallowed, rinse mouth
P370+P378 - In case of fire: Use dry chemical, foam, carbon dioxide for extinction
P403+P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container to comply with applicable local, national and international regulations
2.3. Other hazards

Other hazards which do not result in classification:

- Spills of this product present a serious slipping hazard. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isoamyl nitrite</td>
<td>(CAS No) 110-46-3</td>
<td>98</td>
<td>Flam. Liq. 2, H225, Acute Tox. 4 (Oral), H302, Acute Tox. 4 (Inhalation), H332</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:

- Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation:

- Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, give artificial respiration. In case of breathing difficulties administer oxygen by trained personnel. Seek medical attention immediately.

First-aid measures after skin contact:

- Immediately flush skin with plenty of water for at least 15 minutes. Do not rub the skin and eyes after direct contact with the product. Seek medical attention immediately. Wash contaminated clothing before reuse.

First-aid measures after eye contact:

- In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Immediately get medical attention.

First-aid measures after ingestion:

- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER/doctor/physician if you feel unwell.

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

Symptoms/injuries:

- This material or its emissions may affect the central nervous system and/or aggravate pre-existing disorders.

Symptoms/injuries after inhalation:

- Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death.

Symptoms/injuries after skin contact:

- Mild skin irritation. May be absorbed through the skin. Cause vasodilation with symptoms of flushing of the skin, warm feeling and headache.

Symptoms/injuries after eye contact:

- May irritate eyes.

Symptoms/injuries after ingestion:

- Swallowing a small quantity of this material will result in serious health hazard. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death.

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

For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobinemia concentration in the blood. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death. Symptoms may be delayed. The affected person must rest and be kept under medical observation.

06/06/2014 EN (English)
**SECTION 5: Firefighting measures**

5.1. **Extinguishing media**
- Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. **Special hazards arising from the substance or mixture**
- **Fire hazard**: Highly flammable liquid and vapour.
- **Explosion hazard**: May form flammable/explosive vapour-air mixture.

5.3. **Advice for firefighters**
- **Firefighting instructions**: Spray suitable extinguishing media directly at base of flame. Will float and can be reignited on water surface. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Move undamaged containers from immediate hazard area if it can be done safely.
- **Protective equipment for firefighters**: Do not enter fire area without proper protective equipment, including respiratory protection.
- **Other information**: Containers may swell and Burst during a fire due to internal pressure caused by heat. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours. This material will float on water. Thermal combustion may release carbon monoxide and dioxide. Nitrogen oxides (NOx). nitrous acid. Nitrites.

**SECTION 6: Accidental release measures**

6.1. **Personal precautions, protective equipment and emergency procedures**
- **General measures**: Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. No action shall be taken involving any personal risk or without suitable training. Use special care to avoid static electric charges. Wear protective clothing. For further information refer to section 8 : Exposure-controls/personal protection. No naked lights. No smoking.

6.1.1. **For non-emergency personnel**
- **Emergency procedures**: Evacuate unnecessary personnel.

6.1.2. **For emergency responders**
- **Protective equipment**: Equip cleanup crew with proper protection.
- **Emergency procedures**: Ventilate area.

6.2. **Environmental precautions**
- Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. **Methods and material for containment and cleaning up**
- **Methods for cleaning up**: Wear a self-contained breathing apparatus and appropriate personal protective equipment (PPE). Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Ensure all national/local regulations are observed. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Place residue using non-sparking tools in a DOT approved waste container. Consult the appropriate authorities about waste disposal.

6.4. **Reference to other sections**
- See Heading 8. Exposure controls and personal protection.

**SECTION 7: Handling and storage**

7.1. **Precautions for safe handling**
- **Additional hazards when processed**: Handle empty containers with care because residual vapours are flammable.
- **Precautions for safe handling**: Personal protective equipment should be selected based upon the conditions under which this product is handled or used. Use personal protective equipment as required. Do not breathe gas, fumes, vapour or spray. Never use pressure to empty container. Ground/bond container and receiving equipment. Take care to allow internal pressure to escape from container before releasing closures. Remove closure carefully; internal pressure may be present. Keep closure up to prevent leakage. Provide good ventilation in process area to prevent formation of vapour. No naked lights. No smoking. Use only non-sparking tools.
- **Hygiene measures**: PREVENT GENERATION OF MISTS. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Use explosion-proof machinery, apparatus, ventilation facilities, tools, etc. Ensure the ventilation system is regularly maintained and tested. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits. A washing facility/water for eye and skin cleaning purposes should be present. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.

Storage conditions: Keep only in the original container in a cool well-ventilated place. Protect containers against physical damage. Detached outside storage is preferable. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. Store in corrosion-proof area at temperatures below 77 °F (25°C). Store away from direct sunlight or other heat sources. Keep in fireproof place. Keep container tightly closed. Keep away from food and drink.

Incompatible materials: Strong acids, bases. Strong oxidizing agents.

Storage temperature: 2 - 8 °C Store at refrigerated temperatures from 2-8 degrees C (36-46 °F).

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits. Use explosion-proof ventilating equipment.

Personal protective equipment: A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. For certain operations, additional Personal Protection Equipment (PPE) may be required. Protective goggles. Gloves. Protective clothing.

Hand protection: Wear protective gloves. 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.

Eye protection: Chemical goggles or safety glasses.

Skin and body protection: Chemical resistant safety shoes.

Respiratory protection: An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits. Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

Other information: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: Clear.
Colour: Yellow.
Odour: Fruity odour.
Odour threshold: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: No data available
Boiling point: 99 °C (210 °F ) at normal atm
Flash point: < -18 °C (0 °F) - Closed Cup
Amyl Nitrite Inhalant USP
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Auto-ignition temperature : 209 °C (408 °F)
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Density : 0.875 (Specific Gravity @ 25 °C)
Solubility : Water: Insoluble
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
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 additional information available

10.2. Chemical stability
Unstable on exposure to heat. Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid

10.5. Incompatible materials
Keep away from oxidizers, strong acids and strong bases. Reacts with (strong) oxidizers: (increased) risk of fire/explosion.

10.6. Hazardous decomposition products
Thermal combustion may release carbon monoxide and dioxide. Nitrogen oxides (NOx). Nitrites. nitrous acid.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Harmful if swallowed. Harmful if inhaled.

<table>
<thead>
<tr>
<th>isoamyl nitrite (110-46-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
(Supported by available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified
(Supported by available data, the classification criteria are not met)

Respiratory or skin sensitisation : Not classified
(Supported by available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified
(Supported by available data, the classification criteria are not met)

Carcinogenicity : Not classified
(Supported by available data, the classification criteria are not met)

Reproductive toxicity : Not classified
(Supported by available data, the classification criteria are not met)
Amyl Nitrite Inhalant USP
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Specific target organ toxicity (single exposure) : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified
(Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified
(Based on available data, the classification criteria are not met)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if swallowed. Harmful if inhaled.

Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death.

Symptoms/injuries after skin contact : mild skin irritation. May be absorbed through the skin. cause vasodilation with symptoms of flushing of the skin, warm feeling and headache.

Symptoms/injuries after eye contact : May irritate eyes.

Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The material is a coronary vasodilator which may cause increased heart rate, headache, and dizziness and a sharp decrease in blood pressure with resulting loss in consciousness. May cause methemoglobinemia, which is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood), rapid heart rate, unconsciousness and death.

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
Ammonia Inhalant Solution
Persistence and degradability : Not established.

12.3. Bioaccumulative potential
Ammonia Inhalant Solution
Bioaccumulative potential : Not established.

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not re-use empty containers. Ensure all national/local regulations are observed. Consult the appropriate authorities about waste disposal.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Transport document description : UN1113 Amyl nitrite, 3, II
UN-No.(DOT) : 1113
DOT NA no. : UN1113
DOT Proper Shipping Name : Amyl nitrite
Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Amyl Nitrite Inhalant USP
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

<table>
<thead>
<tr>
<th>Hazard labels (DOT)</th>
<th>3 - Flammable liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (DOT)</td>
<td>II - Medium Danger</td>
</tr>
<tr>
<td>DOT Special Provisions (49 CFR 172.102)</td>
<td>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal............. 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.</td>
</tr>
<tr>
<td>DOT Packaging Exceptions (49 CFR 173.xxx)</td>
<td>150</td>
</tr>
<tr>
<td>DOT Packaging Non Bulk (49 CFR 173.xxx)</td>
<td>202</td>
</tr>
<tr>
<td>DOT Packaging Bulk (49 CFR 173.xxx)</td>
<td>242</td>
</tr>
<tr>
<td>DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)</td>
<td>5 L</td>
</tr>
<tr>
<td>DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)</td>
<td>60 L</td>
</tr>
<tr>
<td>DOT Vessel Stowage Location</td>
<td>E - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.</td>
</tr>
<tr>
<td>DOT Vessel Stowage Other</td>
<td>40 - Stow “clear of living quarters”</td>
</tr>
<tr>
<td>Additional information</td>
<td>No supplementary information available.</td>
</tr>
<tr>
<td>ADR</td>
<td>Transport document description</td>
</tr>
<tr>
<td>Transport by sea</td>
<td>No additional information available</td>
</tr>
<tr>
<td>Air transport</td>
<td>No additional information available</td>
</tr>
</tbody>
</table>

SECTION 15: Regulatory information

15.1. US Federal regulations

- Isoamyl nitrite (110-46-3)
  Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

- Isoamyl nitrite (110-46-3)
  Listed on the Canadian DSL (Domestic Substances List) inventory.
  WHMIS Classification
  - Class B Division 2 - Flammable Liquid
  - Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects

EU-Regulations

- Isoamyl nitrite (110-46-3)
  Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) substances.

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified
Amyl Nitrite Inhalant USP
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified

15.2.2. National regulations

**Isoamyl nitrite (110-46-3)**
- Listed on the AiCS (the Australian Inventory of Chemical Substances)
- Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.
- Listed on New Zealand - Inventory of Chemicals (NZIoC)
- Listed on Inventory of Chemicals and Chemical Substances (PICCS)
- Poisonous and Deleterious Substances Control Law

15.3. US State regulations
No additional information available

**SECTION 16: Other information**

Other information : None.

Full text of H-phrases: see section 16:

| Acute Tox. 4 (Inhalation) | Acute toxicity (inhalation) Category 4 |
| Acute Tox. 4 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| H225 | Highly flammable liquid and vapour |
| H302 | Harmful if swallowed |
| H332 | Harmful if inhaled |

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity : 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.

SDS US (GHS HazCom 2012)

This Material Safety Data Sheet is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, the safe handling of chemical materials. James Alexander Corporation (JAC), expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer(s) and/or recognized technical sources. While the information is believed to be accurate, JAC makes no representations as to its accuracy or sufficiency. Conditions of use are beyond JAC’s control and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein and does not relate to its use in combination with any other material or in any other process.

06/06/2014 EN (English) 8/8