Section 1 - Product and Company Information

Product Name                  P-NITROPHENYL-B-D-GLUCOPYRANOSIDE
Product Number                N7006
Brand                         SIGMA

Company                       Sigma-Aldrich
Address                       3050 Spruce Street
                             SAINT LOUIS MO 63103 US
Technical Phone:              800-325-5832
Fax:                          800-325-5052
Emergency Phone:             314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-NITROPHENYL-B-D-GLUCOPYRANOSIDE</td>
<td>2492-87-7</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Ingredient Name: The hazards identified with this product are those associated with the following component(s):

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
<th>Percent</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHANOL</td>
<td>67-56-1</td>
<td>&lt;= 5.5</td>
<td>Yes</td>
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<tr>
<td>ETHYL ALCOHOL, NON-DENATURED, 200 PROOF</td>
<td>64-17-5</td>
<td>&lt;= 1</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula: C12H15NO8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Toxic (USA) Harmful (EU).
Toxic by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin. Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
Target organ(s): Eyes. Kidneys.

The hazards identified with this product are those associated with the residual solvents that are used in the manufacturing process.

HMIS RATING
HEALTH: 2*
FLAMMABILITY: 0
REACTIVITY: 0

NFPA RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 0

*additional chronic hazards present.
Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Combustible liquid.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep container closed. Keep away from heat and open
Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Use supplied-air or SCBA respirators. Europe permits the use of type AXBEK full-face cartridge respirators (EN 14387).
Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>NDS</td>
<td>100 MG/M3</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>NDSCh</td>
<td>300 MG/M3</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>NDSP</td>
<td>-</td>
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</table>

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
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<td>Physical State: Solid</td>
</tr>
<tr>
<td>Molecular Weight</td>
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<tr>
<td>pH</td>
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<td></td>
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<tr>
<td>BP/BP Range</td>
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<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
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<td></td>
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<tr>
<td>Freezing Point</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
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</tr>
<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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</tr>
<tr>
<td>Evaporation Rate</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Surface Tension</td>
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<tr>
<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point</td>
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<tr>
<td>Explosion Limits</td>
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<td>Flammability</td>
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<td>Autoignition Temp</td>
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<td>Refractive Index</td>
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<td>Optical Rotation</td>
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<td>Miscellaneous Data</td>
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<tr>
<td>Solubility</td>
<td>N/A</td>
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</tbody>
</table>

N/A = not available
Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Acids, Acid chlorides, Acid anhydrides, Alkali metals, Oxidizing agents, Reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: May cause skin irritation.
Skin Absorption: Harmful if absorbed through skin.
Eye Contact: May cause eye irritation.
Inhalation: Harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

SIGNS AND SYMPTOMS OF EXPOSURE
May cause convulsions. Gastrointestinal disturbances.

CHRONIC EXPOSURE - CARCINOGEN
Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information
EU ADDITIONAL CLASSIFICATION
Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 20/21/22-68/20/21/22
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with skin, and if swallowed.
S: 36/37
Safety Statements: Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Toxic (USA) Harmful (EU).
Risk Statements: Toxic by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Target organ(s): Eyes. Kidneys.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
NOTES: This product is or contains a component that is subject to SARA313 reporting requirements.

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information
DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.