Section 1 - Product and Company Information

Product Name                         NICOTINIC ACID, 98%
Product Number                       N7850
Brand                                ALDRICH

Company                               Sigma-Aldrich
Street Address                       3050 Spruce Street
City, State, Zip, Country            SAINT LOUIS MO 63103 US
Technical Phone:                     314 771 5765
Emergency Phone:                     414 273 3850 Ext. 5996
Fax:                                  800 325 5052

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>NICOTINIC ACID</td>
<td>59-67-6</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula     C6H5NO2
Synonyms    Acide nicotinique (French) * Acidum nicotinicum *
            Akotin * Anti-pellagra vitamin * Apelagrin *
            Bionic * 3-Carboxypyridine * Daskil * Davitamon
            PP * Direktan * Efacin * Kyselina nikotinova
            (Czech) * NAH * Niacin * Nicacid * Nicangin *
            NICO * Nico-400 * Nicobid * Niccap * Nicocidin *
            Nicocrisina * Nicodan * Nicodelmine * Nicolar *
            Niconacid * Niconat * Niconazid * Nicosan 3 *
            Nicospan * Nicosyl * Nicotamin * Nicotene *
            Nicotil * Nicotine acid * Nicotinipca *
            Nicotinoylhydrazine * Nicotinsaure (German) *
            Nicovasen * Nicovasen * Nicyl * Nipellen *
            Pellagaramin * Pellagra preventive factor *
            Pellagrin * Pelsonin * Peviton * P.P. factor-
            pellagra preventive factor *
            Pyridine-3-carbonic acid *
            Pyridine-beta-carboxylic acid *
            Pyridine-3-carboxylic acid * 3-Pyridinecarboxylic
            acid * Pyridine-carboxylique-3 (French) * S115 *
            SK-Niacin * SR 4390 * Tinic * Vitaplex N *
            Wampocap

RTECS Number: QT0525000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
Irritating to eyes, respiratory system and skin.

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

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

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

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 contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT
379.4 °F 193 °C Method: closed cup

EXPLOSION LIMITS
Lower: 25 %

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): Emits toxic fumes under fire conditions.

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
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

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

STORAGE
Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

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

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Government approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Solid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Color: White</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Form: Powder</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>123.11 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>234 °C</td>
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</tr>
<tr>
<td>Freezing Point</td>
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<td></td>
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<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
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</tr>
<tr>
<td>Saturated Vapor Conc.</td>
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<td></td>
</tr>
<tr>
<td>SG/Density</td>
<td>1.473 g/cm³</td>
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</tr>
<tr>
<td>Bulk Density</td>
<td>500 - 700 kg/l</td>
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</tr>
<tr>
<td>Odor Threshold</td>
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<td></td>
</tr>
<tr>
<td>Volatile%</td>
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<td></td>
</tr>
<tr>
<td>VOC Content</td>
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<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
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<td></td>
</tr>
<tr>
<td>Viscosity</td>
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<tr>
<td>Surface Tension</td>
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</tr>
<tr>
<td>Partition Coefficient</td>
<td>Log Kow: -0.59</td>
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</tr>
<tr>
<td></td>
<td>25 °C</td>
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</tr>
<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point</td>
<td>379.4 °F 193 °C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method: closed cup</td>
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</tr>
<tr>
<td>Explosion Limits</td>
<td>Lower: 25%</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
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</tr>
<tr>
<td>Autoignition Temp</td>
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<td></td>
</tr>
<tr>
<td>Refractive Index</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Data</td>
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</tr>
<tr>
<td>Solubility</td>
<td>Solubility in Water:15 mg/ml H2O</td>
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<tr>
<td></td>
<td>Solvent: Slightly. Soluble.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Solvents: ETHER</td>
<td></td>
</tr>
</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity
STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing 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: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE
Overexposure to nicotinic acid can produce a powerful peripheral vasodilating action. This effect is seen as an intense flushing of the skin and occurs about 15 to 60 minutes after exposure. It is accompanied by a sense of warmth, tingling, and itching of the skin and subsides gradually over a period of 15 to 30 minutes. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

CONDITIONS AGGRAVATED BY EXPOSURE
May produce reversible liver damage

TOXICITY DATA
Oral
Rat
> 5,000 mg/kg
LD50
Skin
Rat
> 2,000 mg/kg
LD50

Oral
Rat
7000 mg/kg
LD50

Intraperitoneal
Rat
730 MG/KG
LD50

Subcutaneous
Rat
5 GM/KG
LD50

Oral
Mouse
3720 mg/kg
LD50
Remarks: Behavioral: Change in motor activity (specific assay).
Lungs, Thorax, or Respiration: Other changes.

Intraperitoneal
Mouse
358 MG/KG
LD50

Subcutaneous
Mouse
3500 MG/KG
LD50

Intravenous
Mouse
5 GM/KG
LD50

Oral
Rabbit
4550 mg/kg
LD50

IRRITATION DATA
Eyes
Rabbit
4 HR
Remarks: Moderate irritation effect
Skin
Rabbit
4 HR.
Remarks: No irritation effect

Section 12 - Ecological Information
ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: Onchorhynchus mykiss (Rainbow trout)
Time: 96 h
Value: 520 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 77 mg/l

Test Type: EC50 Algae
Species: Scenedesmus subspicatus
Time: 96 h
Value: 68 mg/l

Test Type: EC50 Algae
Species: other microorganisms
Time: 16 h
Value: 120 mg/l

Test Type: EC50 Algae
Species: Scenedesmus subspicatus
Time: 72 h
Value: 90 mg/l
Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. 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: Xi
Indication of Danger: Irritant.
R: 36/37/38
Risk Statements: Irritating to eyes, respiratory system and skin.
S: 26 36
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Irritant.
Risk Statements: Irritating to eyes, respiratory system and skin.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

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
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