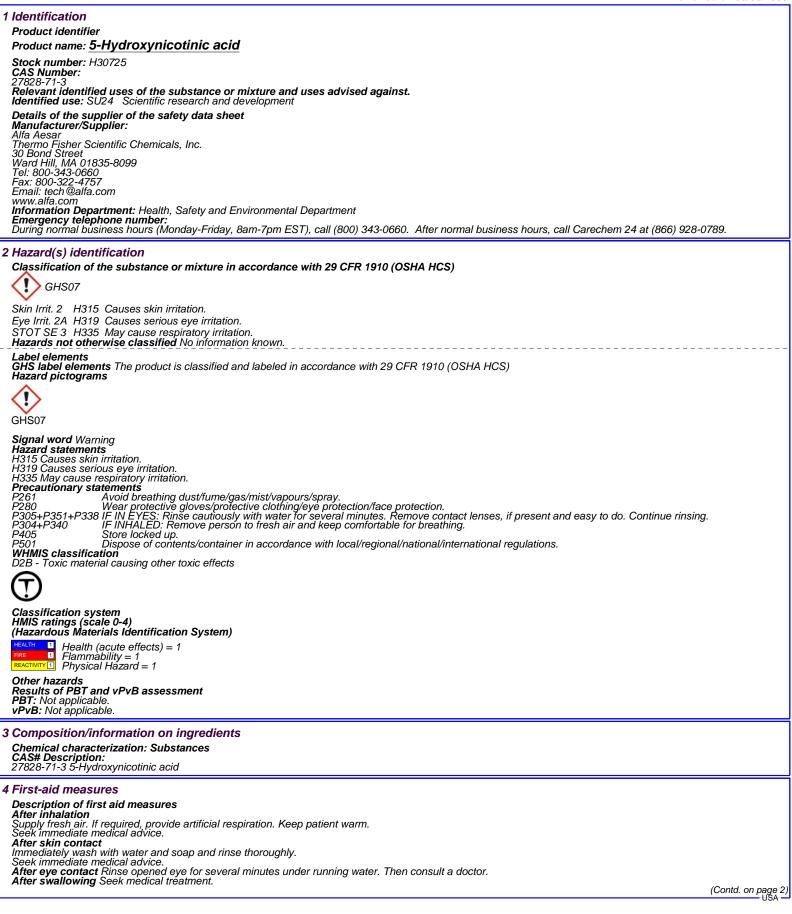


Safety Data Sheet per OSHA HazCom 2012



Product name: 5-Hydroxynicotinic acid

## (Contd. of page 1) Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available. 5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Nitrogen oxides (NOx) Hydrogen cyanide (HCN) Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit. 6 Accidental release measures Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. Reference to other sections See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information. 7 Handling and storage Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: No information known. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from oxidizing agents. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Specific end use(s) No further relevant information available. 8 Exposure controls/personal protection Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace: Not required. Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves The selection of suitable gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Penetration time of glove material (in minutes) Not determined Eye protection: Safety glasses Body protection: Protective work clothing. 9 Physical and chemical properties Information on basic physical and chemical properties General Information Appearance: Form: Powder Color: White Odor: Not determined Odor threshold: Not determined pH-value: Not applicable. Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start: >300 °C (>572 °F) Not determined Not determined Flash point: Not applicable Flammability (solid, gaseous) Not determined Ignition temperature: Decomposition temperature: Not determined Not determined (Contd. on page 3)

## Product name: 5-Hydroxynicotinic acid

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|--|---|--------------------|
| roduct name: 5-Hydroxynicotinic a  | cid   |                    |
|  |   | (Contd. of page 2  |
| Auto igniting:   | Not determined.   |                    |
| Danger of explosion:   | Product does not present an explosion hazard.   |                    |
| Explosion limits:<br>Lower:  | Not determined  |                    |
| Upper:   | Not determined  |                    |
| Vaþór pressure:<br>Density:  | Not applicable.<br>Not determined   |                    |
| Relative density   | Not determined.   |                    |
| Vapor density  | Not applicable.   |                    |
| Evaporation rate<br>Solubility in / Miscibility with                               | Not applicable.   |                    |
| Water:   | Not determined  |                    |
| Partition coefficient (n-octanol/water):<br>Viscosity:                             | Not determined.   |                    |
| dynamic:   | Not applicable.   |                    |
| kinematic:<br>Other information  | Not applicable.<br>No further relevant information available.   |                    |
|  |   |                    |
| 0 Stability and reactivity   |   |                    |
| Reactivity No information known  |   |                    |
| Chemical stability Stable under recommendations t                                  | nended storage conditions.<br><b>o be avoided:</b> Decomposition will not occur if used and stored according to specifications. |                    |
| Thermal decomposition / conditions to<br>Possibility of hazardous reactions No     | b be avoided: Decomposition will not occur if used and stored according to specifications.<br>deprendus reactions known         |                    |
| Conditions to avoid No further relevant  | t information available.  |                    |
| Incompatible materials: Oxidizing ager<br>Hazardous decomposition products:        |   |                    |
| Carbon monoxide and carbon dioxide   |   |                    |
| Nitrogen oxides<br>Hydrogen cyanide  |   |                    |
|  |   |                    |
| 1 Toxicological information  |   |                    |
| Information on toxicological effects   |   |                    |
| Acute toxicity: No effects known.<br>LD/LC50 values that are relevant for c        | Jacobiantian No data  |                    |
| Skin irritation or corrosion: Causes sk  | kin irritation.   |                    |
| Eve irritation or corrosion: Causes ser  | rious eve irritation.   |                    |
| Sensitization: No sensitizing effects kno  | own.<br>own.<br>on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.                |                    |
| Carcinogenicity: No classification data  | on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.                                |                    |
| Reproductive toxicity: No effects know   | ín.   |                    |
| Specific target organ system toxicity -<br>Specific target organ system toxicity - | <ul> <li>repeated exposure: No effects known.</li> <li>single exposure: May cause respiratory irritation.</li> </ul>            |                    |
| Aspiration hazard: No effects known.   |   |                    |
| Subacute to chronic toxicity: No effect  | ts known.<br>To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.                  |                    |
|  | I UIE DESCOLOUR KNOWIEUGE UIE doute and onionio toxiony of and cases  |                    |
| 12 Ecological information  |   |                    |
| Toxicity<br>Aquatic toxicity: No further relevant info                             | armation available  |                    |
| Persistence and degradability No furth   | ner relevant information available.   |                    |
| Bioaccumulative potential No further re  | elevant information available.  |                    |
| Mobility in soil No further relevant inform<br>Additional ecological information:  | nation available.   |                    |
| General notes:   | and the second                |                    |
| Do not allow material to be released to the  | he environment without proper governmental permits.<br>quantities to reach ground water, water course or sewage system.         |                    |
| Avoid transfer into the environment.   |   |                    |
| Results of PBT and vPvB assessment   | 1   |                    |
| PBT: Not applicable.<br>vPvB: Not applicable.                                      |   |                    |
| Other adverse effects No further releva  | Int information available.  |                    |
| 13 Disposal considerations   |   |                    |
| Waste treatment methods  |   |                    |
| Recommendation Consult state, local of   | or national regulations to ensure proper disposal.  |                    |
| Uncleaned packagings:<br>Recommendation: Disposal must be m                        |   |                    |
| Recommendation. Disposar macros  |   |                    |
| 14 Transport information<br>Not a hazardous material for transportati              | ion   |                    |
| UN-Number  |   |                    |
| DOT, IMDG, IATA  | None  |                    |
| UN proper shipping name<br>DOT, IMDG, IATA   | None  |                    |
| Transport hazard class(es)   |   |                    |
| DOT, ADR, IMDG, IATA   |   |                    |
| Class  | None  |                    |
| Packing group<br>DOT, IMDG, IATA   | None  |                    |
| Environmental hazards:   | Not applicable.   |                    |
| Special precautions for user   | Not applicable.   |                    |
| · · · ·  | II of MARPOL73/78 and the IBC Code Not applicable.  |                    |
|  |   | (Contd. on page    |
|  |   |                    |

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| roduct name: 5-Hydroxynicotinic acid   |   |
|--|---|
|  | (Contd. of page   |
| Transport/Additional information:  | Not dangerous according to the above specifications.  |
| DOT<br>Marine Pollutant (DOT):   | No  |
|  |   |
| 5 Regulatory information<br>Safety, health and environmental regulations/legisla<br>GHS label elements The product is classified and label<br>Hazard pictograms  | n <b>tion specific for the substance or mixture</b><br>led in accordance with 29 CFR 1910 (OSHA HCS)  |
| P304+P340 IF INHALED: Remove person to fres.<br>P405 Store locked up.<br>P501 Dispose of contents/container in acco<br>National regulations<br>This product is not listed in the U.S. Environmental Prote<br>to research and development only. This product must be<br>product must not be used for commercial purposes or in<br>SARA Section 313 (specific toxic chemical listings):<br>California Proposition 65<br>Prop 65 - Developmental toxicity Substance is not list<br>Prop 65 - Developmental toxicity, female Substance is<br>Information about limitation of use: For use only by te<br>Other regulations, limitations and prohibitive regulat<br>Substance of Very High Concern (SVHC) according  | othing/eye protection/face protection.<br>ater for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>sh air and keep comfortable for breathing.<br>Fordance with local/regional/national/international regulations.<br>Tection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted<br>e used by or directly under the supervision of a technically qualified individual as defined by TSCA. This<br>formulations for commercial purposes.<br>Substance is not listed.<br>Teck is not listed.<br>Tot listed.<br>Tot fisted.<br>Tot fisted. |
| information to ensure proper use and protect the health<br>conformance with this Material Safety Data Sheet, or in   | ment to other information gathered by them, and should make independent judgement of suitability of this<br>and safety of employees. This information is furnished without warranty, and any use of the product not ir<br>combination with any other product or process, is the responsibility of the user.   |
| Department issuing SDS: Global Marketing Department<br>Date of preparation / last revision 1/24/2015 / -<br>Abbreviations and acronyms:<br>RID: Règlement international concernant le transport des marchandises de<br>IATA-DGR: Dangerous Goods Regulations by the "International Air Transp<br>ICAO-11: Technical Instructions by the "International Civil Aviation Organiz<br>IMDG: International Maritime Code for Dangerous Goods<br>DDT: US Department of Transportation<br>IATA: International Air Transport Association<br>CAS: Chemical Abstracts Service (division of the American Chemical Socie<br>HMIS: Hazardous Materials Identification System (USA)<br>WHMIS: Workplace Hazardous Materials Information System (Canada)<br>LC50: Lethal concentration, 50 percent<br>USD: Lethal concentration, 50 percent<br>VPW: very Persistent and very Bioaccumulative<br>ACGIH: American Conference of Governmental Industrial Hygienists (USA<br>OSHA: Occupational Safety and Health Administration (USA)<br>NTP: National Toxicology Program (USA)<br>IARC: International Safety and Health Administration (USA) | langereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)<br>port Association" (IATA)<br>zation" (ICAO)<br>jety)  |