



Niacinamide Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of compilation	:	March 06, 2012
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Niacinamide

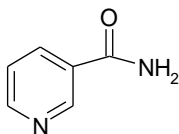
Safety Data Sheet

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SECTION 1: PRODUCT IDENTIFICATION

1.1. Identification

PRODUCT NAME	: Niacinamide
CAS RN	: 98-92-0
EC#	: 202-713-4
SYNONYMS	: 3-Pyridinecarboxamide, Niacinamide, Nicotinamide, 3-Carbamoylpyridine, 3-Pyridinecarboxamide, Vitamin . B3, beta-Pyridinecarboxamidem-(Aminocarbonyl)pyridine, Niacinamide Feed Grade; Niacinamide Free Flow
SYSTEMATIC NAME	: 3-Pyridinecarboxamide
MOLECULAR FORMULA	: C ₆ H ₆ N ₂ O
STRUCTURAL FORMULA	



1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Niacinamide is used as a nutrient supplement in Pharmaceutical products. It has been used in beverages, in the enrichment of bread, flour, and other grain-derived products. Animal feed is routinely supplemented with nicotinamide. It is also used in multi-vitamin preparations and dietary supplement. It is used in the treatment of pellagra. It is also used as an ingredient in cosmetic applications

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

HEAD OFFICE: Jubilant Ingrevia Limited, Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 – India

T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96 support@jubl.com - www.jubilantingrevia.com

1.4. Emergency telephone number

For Chemical Emergency (in the case of fire, leak, spill, exposure or accident) Call

Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India) : 000-800-100-7141

SECTION 2: HAZARD(S) IDENTIFICATION

2.1. Classification of the substance or mixture

GHS-US classification

Serious Eye Damage/ Eye Irritation: Category 2A

2.2. Label Elements

Hazard Pictogram: GHS 07.



Signal Word: Warning!

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS

- H319: Causes serious eye irritation.

PRECAUTIONARY STATEMENTS

- P264: Wash hands, eyes and face thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection.
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313: If eye irritation persists: Get medical advice/attention
- P405: Store locked up
- P501: Dispose of contents/container in accordance with local/regional/national/ international regulations.

2.3 Other Hazards:

- WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR (DURING PROCESSING)



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	Purity	GHS-US classification
Niacinamide	98-92-0	~100%	Serious Eye Damage/ Eye Irritation: Category 2A

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Skin Contact: Wash exposed area twice with soap and water. The exposed area should be examined by medical personnel if irritation or pain persists after the area has been washed.

Eye Contact: Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. Seek medical advice if symptoms persist.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected person warm and at rest. Seek medical advice if symptoms persist.

Ingestion: If swallowed, contact physician or poison control center immediately. Give oxygen if respiration is shallow. Do not give anything by mouth to an unconscious person.

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

Acute: Niacinamide is an eye irritant, but does not irritate the skin. May cause respiratory irritation upon exposure to dusty conditions. In humans, nausea with or without vomiting was the main effect after acute exposure and was generally seen after doses in excess of 5 grams/day; no effects were persistent.

Delayed Effects: None known.

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

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5 : FIRE-FIGHTING MEASURES

5.1 Extinguishing media

- *Appropriate extinguishing media:* Dry chemical powder, carbon dioxide, and alcohol resistant foam. Water may be in effective. Water sprays can be effective in cooling down the fire-exposed containers and knocking down the vapours. Water jets may be used to flush spills away and dilute the same to non-flammable mixtures fog or alcohol-resistant foam by directing streams to the periphery of the fires to prevent spread. Do not permit water to get inside containers.

5.2 Special Protective Equipment and Precautions for Fire Fighter

Hazardous Products of Combustion:

Cyanide and nitrogen oxides may be released during thermal decomposition.

Potential for Dust Explosion:

Niacinamide presents a significant dust explosion hazard unless properly handled. Strong dust explosion, indicator 2, Maximum Explosion Pressure = 8.0 bar; Maximum Rate of Pressure Rise = 885 bar/s; Kst = 240 bar.m/s; Minimum Ignition Energy = 3 - 5 mJ; Limiting Oxygen Concentration = 13 - 14%; Minimum Explosible Concentration = 50 - 60 g/m³.

Special Flammability Hazards:

This product is an organic solid. As such, in its finely divided form, this product has the potential to present a dust explosion hazard under certain conditions.

5.3 Advice for firefighters

- Wear self-contained breathing apparatus and protective clothing. Normal firefighting procedures may be used. Avoid generating dust. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

6.3. Methods and material for containment and cleaning up

Remove all ignition sources. Ventilate the area of spill or leak. Wear protective equipment during clean-up. Material can then be collected for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Dust deposits should not be allowed to accumulate on



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for Unique Hazards: This material may present a dust explosion hazard in solid form and is sensitive to ignition by electrostatic discharge. Maintain areas below flammable vapor / explosive dust concentrations.

Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.

Special Handling Equipment: Not applicable

7.2 Conditions for safe storage, including any incompatibilities

Store at ambient temperature in a dry and well ventilated place. Keep securely closed when not in use. Protect containers against physical damage. Keep away from strong acids, strong bases and oxidizing agents. Do not store with poisons. Minimize dust generation and accumulation.

Dry powders can build static electricity charges when subjected to friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

- Exposure Limits Values

Country	Occupational Exposure Limit
Latvia	1 mg/m ³
New Zealand	Particulates: 10 mg/m ³ (inhalable); 3 mg/m ³ (respirable)
United States (OSHA)	Particulates: 15 mg/m ³ (total dust); 5 mg/m ³ (respirable fraction)
United States (NIOSH), Belgium, Canada (Quebec), Singapore, South Korea	Particulates: 10 mg/m ³

Exposure Controls

- Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Local ventilation is usually preferred. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection:

- Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.
- Eyes:** Safety goggles/ Chemical Safety glasses and Face shield.
- Clothing:** Boots and clothing to prevent contact.
- Respirator:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
- For emergency situations, wear a positive pressure, pressure-demand, full face piece self-contained breathing apparatus (SCBA) or pressure-demand supplied air respirator with escape SCBA and a fully-encapsulating, chemical resistant suit. (EPA, 1998).
- Hand protection:**
 - In full contact:**
 - Glove material: nitrile rubber
 - Layer thickness: 0.11 mm
 - Breakthrough time: > 480 Min.
 - In Splash contact:**
 - Glove material: nitrile rubber
 - Layer thickness: 0.11 mm
 - Breakthrough time: > 480 Min.



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 740 Dermatril® (full contact), 740 Dermatril® (splash contact).

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr.No.	Parameter	Typical value
1	Appearance	White crystalline/Granular powder
2	Odor	Odorless
3	Odor Threshold	Not available
4	Melting point	128-131°C
5	Boiling point	157 deg C at 5X10 ⁻⁴ mm Hg
6	Flash point	182°C
7	Evaporation rate (n-BuAc=1)	Not available
8	Explosive limits	Not available
9	Vapor pressure	< 1 mm Hg
10	Vapor density (air=1)	Not available
11	Specific gravity (water=1)	1.400 at 25 deg C
12	Solubility	Freely soluble in water and in alcohol. Soluble in Glycerin.
13	PH @ 5%aq solution water at 25°C	6.0 to 7.5
14	Log Kow (octanol/water)	-0.37 (estimated)
15	Auto-ignition temperature	480°C
16	Decomposition temperature	When heated to decomposition it emits toxic fumes of /nitrogen oxides/Carbon oxides
17	Viscosity	Not available
18	Bulk density	~360 Kg/m ³
19	Molecular Weight	122.12
20	pKa (@20°C)	3.35
21	Koc	51.56 (estimated)
22	Flammable material	Not highly flammable; may form combustible dust concentrations in air
23	Oxidizer	No
24	Pyrophoric material	No
25	Explosive material	No

9.2. Other safety characteristics

- Combustibility Index : 2 (23°C)
2 (100°C)**
- Dust explosion class:** Strong dust explosion , indicator 2, Maximum Explosion Pressure = 8.0 bar; Maximum Rate of Pressure Rise = 885 bar/s; Kst = 240 bar.m/s; Minimum Ignition Energy = 3 - 5 mJ; Limiting Oxygen Concentration = 13 - 14%; Minimum Explosible Concentration = 50 - 60 g/m³.
- Deflagration:** No data available
- Layer Ignition Temperature (LIT):** No data available
- Particle size:** No data available

SECTION 10: STABILITY AND REACTIVITY

- Reactivity:** Not classified as dangerously reactive
- Stability:** Stable under normal temperatures and conditions.
- Conditions to avoid:** Avoid static discharge and generation of dust. Thermal decomposition begins at 150°C.
- Incompatible chemicals:** Strong acids and bases, strong oxidizing agents.
- Hazardous decomposition:** Burning may produce hazardous combustion gases like cyanides, Nitrogen oxides, carbon monoxide, carbon dioxide.
- Hazardous Polymerization:** Not expected.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- **Acute toxicity:** In contact with eyes, it causes serious eye irritation and redness of eyes.
- **Chronic Effects:** Affects the kidneys, eyes & liver.
- **RTECS#:** QS3675000
- **LD50/LC50:**

Test	Species	Result
Acute Oral LD50	Rat	3530-3540mg/kg
Acute Dermal LD50	Rabbit	>2000 mg/kg

- Skin irritation: rabbit, Patch test OECD 404, 1981: Not irritating
- Eye irritation: rabbit, OECD Guideline 405: moderately irritating

Skin corrosion/irritation : skin: non-irritant (guinea pig).

Serious eye damage/irritation : eye: strongly irritant (rabbit; OECD No. 405), Causes serious eye irritation.

Respiratory or skin sensitization : Not sensitizing.

- **Type:** Beuhler test.
- **Species:** Guinea pig.
- **Method:** OECD Guideline- 406 "Skin sensitization", 1981.
- **Result:** not sensitizing.

Germ cell Mutagenicity : This material was tested and found to be non-mutagenic in the Ames assay and Mouse Micronucleus test. Equivocal test results occurred in the Unscheduled DNA Synthesis assay in rat primary hepatocytes..

Carcinogenicity : Not a carcinogen

Route of administration	Species	Exposure period	Doses	Result	Source
oral feed	Mouse (swiss)	life span study (110 weeks)	1%, average daily intake, m: 100.5 mg, f: 66.3 mg.	Consumption of nicotinamide caused no apparent carcinogenic action	Degussa Antwerpen N.V. Antwerpen 4

Reproductive toxicity : No reproductive and developmental toxicity.

STOT-single exposure : No data is available.

STOT- repeated exposure

- **Species:** Rat (Wistar)
- **Route of administration:** oral feed
- **Exposure period:** 28 days
- **Doses:** 215 and 1000 mg/kg
- **Method:** OECD Guideline- 407 " Repeated dose oral toxicity- Rodent"
- **Year:** 1981
- **GLP:** yes
- **Remark:** Effects: decreased body weight and food consumption in males; increased transaminases; spleen weight reduced in males liver, weight increased in females; minimal to mild hypertrophy in liver; reduced extramedullary hematopoiesis, all findings were reversible.

Aspiration Hazards : Based on physical properties, not likely to be an aspiration hazard

Primary Route(s) of Exposure: Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.

Most important symptoms and effects, both acute and delayed

Niacinamide is an eye irritant, but does not irritate the skin. May cause respiratory irritation upon exposure to dusty conditions. In humans, nausea with or without vomiting was the main effect after acute exposure and was generally seen after doses in excess of 5 grams/day; no effects were persistent.

Delayed Effects: None known.

Additive or Synergistic effects: None known.



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

12.1. Toxicity

Ecotoxicity:

- EC50 (24h) Daphnia magna > 1000 mg/L
- LC50 (96h) Poecilia reticulata (guppy) > 1000 mg/L
- EC50 (72h) Scenedesmus subspicatus > 1000 mg/L

12.2. Persistence and degradability

- **AEROBIC:** Nicotinamide was determined to be readily biodegradable in an aerobic screening test recommended by the Department of Environment, Standing Committee of Analysts, UK(1).
- **ANAEROBIC:** Nicotinamide was not degraded using an anaerobic spore-forming rod (Clostridia sp.) bacteria isolated from Potamac River mud(1).

12.3. Bioaccumulative potential (Predicted)

- BCF = 3
- Log Kow = -0.37

Based on the Log Kow and Bio concentration factor value it is expected to have low potential to concentrate in fatty tissue of fish and aquatic organisms.

12.4. Mobility in soil

- Log Koc = 15 (If released to soil, nicotinamide is expected to have very high mobility based upon estimated KOC value.)
- Henry's Law Constant = 2.9×10^{-12} atm-cu m/mole. (Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant)
- Log Kow = -0.37 (Very Low bioaccumulation is expected).

12.5. Other adverse effects

Environment Fate:

- Nicotinamide's production and use as a medication and dietary supplement may result in its release to the environment through various waste streams.
- If released to air, an estimated vapor pressure of 4.2×10^{-4} mm Hg at 25 deg C indicates nicotinamide will exist in both the vapor and particulate phases in the atmosphere.
- Vapor-phase nicotinamide will be degraded in the atmosphere by reaction with photo chemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 7 days.
- If released to soil, nicotinamide is expected to have very high mobility based upon an estimated Koc of 15.
- Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 2.9×10^{-12} atm-cu m/mole.
- If released into water, nicotinamide is not expected to adsorb to suspended solids and sediment based upon the estimated Koc.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Burn in a chemical incinerator equipped with an afterburner and scrubber.
- Exert extra care in igniting, as this material is combustible.
- Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Note that disposal regulations may also apply to empty containers and equipment reinstates.

SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be Non-Hazardous for transport by Air/Rail/Road and Sea and thus not regulated by IATA/ICAO/IMO/IMDG/US DOT.

S.No	Agency	Status
Land Transport	DOT	Not Regulated
Maritime Transport	IMDG	Not Regulated
Air Transport	IATA	Not Regulated

Environmental hazards

- It is expected that this chemical is not a marine pollutant and is not Harmful to the Aquatic environment.

SECTION 15: REGULATORY INFORMATION

European Union Information

Classification as per CLP Regulation 1272/2008:

- Eye Irrit Cat.2
- Hazard Statements: : H319



Niacinamide

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Chemical Inventory Lists:	Status	
TSCA:	Listed	Unique identifier: 18382
EC/ List No.	Listed	EC No. 202-713-4
Canada(DSL/NDSL):	Listed (DSL)	Unique identifier: No
Korea:	Listed (KECI)	Unique identifier: KE No. KE-29935
Australia:	Listed (AICS)	Unique identifier: No
Taiwan	Listed (TCSI)	Unique identifier: No
New Zealand	Listed (NZIoC)	Unique identifier: No
Philippines	Listed (PICCS)	Unique identifier: No
China: IECSC	Listed	Unique identifier: No. But Serial No.is 37038
Japanese ENCS	Listed	MITI No. 5-736

US information

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act): Niacinamide not listed

SARA 302/304 : Niacinamide not listed

SARA 311/312 : See section 2 for more information

California Prop. 65: Niacinamide not listed

CAA (Clean Air Act): Niacinamide not listed

CWA (Clean Water Act): Niacinamide not listed

EU Information

Water hazard class (WGK) 1, Low hazard to waters

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006: Niacinamide not listed

SECTION 16: OTHER INFORMATION

a) Compilation information of safety data sheet

Date of compilation : March 06, 2012
Chemical : Niacinamide
CAS # : 98-92-0
File Name : 0014EM Ghs02 Div.4 sds Niacinamide
Revision Number : 02
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b) A key or legend to aberrations and acronyms used in the safety data sheet

- PBT =Persistent Bio accumulative and Toxic.
- vPvB= Very Persistent and Very Bio accumulative.
- SCBA= Self Contained Breathing Apparatus.
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit.
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- IDLH= Immediately Dangerous to Life or Health.
- UEL= Upper Explosive Limit.
- LEL= Lower Explosive Limit.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Program
- IARC= International Agency for Research on Cancer.



Niacinamide Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- EPA=Environmental Protection Agency.
- TSCA= Toxic Substances Control Act.
- CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act.
- SARA= Superfund Amendments and Reauthorization Act.
- NFPA= National Fire Protection Association.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDSL= Domestic/Non-Domestic Substances List.
- CSR=Chemical Safety Report.
- BCF = Bio Concentration Factor.
- DNEL = Derived No Effect Level.
- PNEC = Predicted No Effect Concentration.
- TLV = Threshold Limit Value.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation, Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonized System.
- ADR = Accord European relative au transport international de marchandises.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- EmS = Emergency measures on Sea.
- ICAO = International Civil Aviation Organization.
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation.

c) Key Literature reference and sources for data

Biographical reference and data sources

- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- DIR 67/548/EWG, last modification by DIR 2009/2/EC
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 453/2009.
- OECD Guideline- 407 " Repeated dose oral toxicity- Rodent" Year: 1981
- Degussa Antwerpen N.V. Antwerpen 4
- Department of Environment, Standing Committee of Analysts, UK(1).

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

(End of Safety Data Sheet)