



MATERIAL SAFETY DATA SHEET

KOCH AGRONOMIC SERVICES, LLC

1. Product and Company Identification

Material name Nitamin Nfusion® 22-0-0 Slow-Release Nitrogen Fertilizer
Revision date 03-31-2011
Version # 01
CAS # Mixture
MSDS Number KAS_NitN22_NA
Synonym(s) Nitamin Nfusion * 22-0-0
Manufacturer/Supplier Koch Agronomic Services, LLC
 4111 E 37th St N
 Wichita, KS 67220 US
 kochmsds@kochind.com
 1.316.828.7672

Emergency For Chemical Emergency
 Call CHEMTREC day or night
 USA/Canada - 1.800.424.9300
 Outside USA/Canada - 1.703.527.3887
 (collect calls accepted)

2. Hazards Identification

Physical state Liquid.
Appearance Clear/cloudy blue liquid.
Emergency overview May cause eye irritation. Prolonged or repeated contact may dry skin and cause mild to moderate skin irritation.
OSHA regulatory status This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects
Routes of exposure Eye contact. Skin contact. Inhalation.
Eyes May cause slight to moderate eye irritation. Vapor or spray in the eyes may cause irritation and smarting.
Skin Not expected to be a primary skin irritant. May cause skin irritation on prolonged or repeated contact.
Inhalation Prolonged or repeated inhalation may cause respiratory tract irritation. Symptoms may include coughing, difficulty breathing and shortness of breath. Vapors may cause headache, fatigue, dizziness and nausea.
Ingestion Not a likely route of entry. Health injuries are not known or expected under normal use.
Chronic effects The effects of long term exposure to this product are not known.
 This product contains compounds that may release ammonia when heated. Prolonged or repeated overexposure to ammonia vapors may harm the eyes, mucous membranes, and/or upper respiratory tract.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Urea	57-13-6	25 - 28
Other non-hazardous components:	-	> 25
Ammonia, anhydrous	7664-41-7	< 0.5

Composition comments This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

4. First Aid Measures

First aid procedures

Eye contact	Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get immediate medical attention.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Launder contaminated clothing before reuse.
Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms persist.
Ingestion	Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

5. Fire Fighting Measures

Flammable properties	This product is not flammable or combustible. Organic solids may burn, but only after removal of water and exposure to intense heat and flame.
Extinguishing media	
Suitable extinguishing media	Water spray, dry powder or carbon dioxide.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.
Fire fighting equipment/instructions	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Hazardous combustion products	Fire will generate toxic and irritating gases.

6. Accidental Release Measures

Personal precautions	Wear protective clothing as described in Section 8 of this MSDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
Methods for cleaning up	Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container. Do not flush to sewer or allow to enter waterways. Following product recovery, flush area with water. Retain all contaminated water for removal and treatment. For waste disposal, see section 13 of the MSDS. Uncontaminated spilled material may be reused.

7. Handling and Storage

Handling	Avoid contact with eyes and prolonged or repeated contact with skin. Wear appropriate personal protective equipment (See Section 8). Avoid breathing mist or vapor. Use only in well-ventilated areas. Do not use in areas without adequate ventilation. Contents may develop pressure upon prolonged storage. Handle and open container with care. Wash thoroughly after handling. Eye wash facilities and emergency shower must be available when handling this product.
Storage	Covered storage of portable containers is recommended. Store in original tightly closed container. Do not store above 25°C (77°F) for maximum storage life. Protect from freezing. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	35 ppm
	TWA	25 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	PEL	50 ppm
		35 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	24 mg/m ³
	TWA	35 ppm
		17 mg/m ³
	25 ppm	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	35 ppm
	TWA	25 ppm

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	24 mg/m ³
	TWA	35 ppm
		17 mg/m ³
	25 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	24 mg/m ³
	TWA	35 ppm
		17 mg/m ³
	25 ppm	

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Ammonia, anhydrous (7664-41-7)	STEL	27 mg/m ³
	TWA	35 ppm
		18 mg/m ³
	25 ppm	

Engineering controls Adequate ventilation should be provided so that exposure limits are not exceeded.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection Rubber or neoprene gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection No protection is ordinarily required under normal conditions of use. However, if feasible engineering controls do not prevent overexposure, a full-face respirator with cartridges approved by NIOSH/MSHA for ammonia vapors and dusts/mists may be used only when exposure levels are known to be within the unit's capability. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance Clear/cloudy blue liquid.

Color Blue.

Odor	Slight amide/amine.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	10.6 Approx.
Melting point	Not applicable.
Freezing point	Not available.
Boiling point	212 °F (100 °C) Approx.
Flash point	None when heated to 100°C
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.23
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not applicable.
Density	10.2 lb/gal @ 25C

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Avoid storage in unagitated bulk tanks above the recommended storage temperature (see section 7 of the MSDS). Avoid incompatible materials and intense heat.
Incompatible materials	Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Ammonia fumes may be released upon heating. When heated to decomposition the product emits acrid smoke and irritating fumes.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Toxicological data

Components	Test Results
Urea (57-13-6)	Acute Oral LD50 Rat: 8471 mg/kg
Acute effects	Not expected to be acutely toxic by ingestion, inhalation or in contact with the skin or eyes.
Local effects	May cause eye irritation. Vapor or spray in the eyes may cause irritation and smarting. Prolonged or repeated skin contact may cause irritation.
Chronic effects	This product contains compounds that may release ammonia when heated. Prolonged or repeated overexposure to ammonia vapors may harm the eyes, mucous membranes, and/or upper respiratory tract.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Urea (57-13-6)	EC50 Water flea (Daphnia magna): 3910 mg/l 48 hours LC50 Giant gourami (Colisa fasciata): 5 mg/l 96 hours

Components	Test Results
Ammonia, anhydrous (7664-41-7)	LC50 Carp (Hypophthalmichthys nobilis): 0.3 mg/l 96 hours
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic toxicity	Not classified.
Persistence and degradability	The product is biodegradable under aerobic and anaerobic conditions.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.
Mobility in environmental media	The product is soluble in water.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations. Do not allow this material to drain into sewers/water supplies.
Waste from residues / unused products	Dispose in accordance with all local, State and Federal regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Ammonia.

CWA SECTION 311. The following chemicals are listed under Section 311 as hazardous substances requiring the submission of a National Pollutant Discharge Elimination System (NPDES) Permit Application to EPA: Ammonia.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

Not regulated.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

Ammonia, anhydrous (CAS 7664-41-7) 100 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

Ammonia, anhydrous (CAS 7664-41-7) 500 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ammonia, anhydrous (CAS 7664-41-7) Listed.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

Ammonia, anhydrous: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance (40 CFR 355, Appendix A)	No
Section 311/312 (40 CFR 370)	No
Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)	Not controlled
Canadian regulations	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.
WHMIS status	Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Ammonia, anhydrous (CAS 7664-41-7) Listed.

US - Massachusetts RTK - Substance: Listed substance

Ammonia, anhydrous (CAS 7664-41-7) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

Ammonia, anhydrous (CAS 7664-41-7) 500 LBS

US - New Jersey RTK - Substances: Listed substance

Ammonia, anhydrous (CAS 7664-41-7) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Ammonia, anhydrous (CAS 7664-41-7) Listed.

Mexico regulations This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 0
Instability: 0

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.

Issue date

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