



SAFETY DATA SHEET

SECTION 1: Identification

Product identifier: N-BOUND

Other means of identification:

SDS number - EA0004

Recommended use: Fertilizer Coating

Recommended restrictions: Use in accordance with supplier's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company name: Eco Agro Resources, LLC

Address: 603-C Eastchester Drive
High Point, North Carolina 27262

Telephone: 800-483-1193 (8:00AM-5:00PM EST)

Emergency: Call CHEMTREC day or night
Within USA/Canada 1-800-424-9300
Outside USA/Canada +1 703-427-3887 (collect calls accepted)

SECTION 2: Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Causes serious eye irritation	Category 2
OSHA hazard(s)	Combustible Liquid	

Label elements
Hazard symbol(s)



Signal word: Warning
Hazard statement(s): Causes serious eye irritation.

Precautionary statement(s)
Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protect and face protection.

Response:	If in eyes: Rinse with water for several minutes. Remove contact lenses, if present and continue rinsing. Immediately seek medical attention or advice.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with all applicable local/state/national/international laws and regulations.
Hazard(s) not otherwise Classified (HNOC)	None Known

SECTION 3: Composition/information on ingredients

Mixture

Hazardous components

Chemical name	Common Name	CAS number	%
N-Cyanoguanidine	Dicyandiamide	461-58-5	10-30
Dimethyl sulfoxide	DMSO	67-68-5	30-80
Benzoic aldehyde	Benzaldehyde	100-52-7	1-5
Dye & other	Proprietary		0.1-5

Composition comments All concentrations are in percent by weight. Exact percentage values for components are proprietary in accordance with 29 CFR 1910.1200(i). Remaining components are proprietary, non-hazardous, and /or present at amounts below reportable limits.

SECTION 4: First-aid Measures

Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Call a physician.
Skin contact:	Remove all contaminated clothing immediately. Wash immediately with soap and plenty of water. If irritation develops and persists, get medical attention. Launder contaminated clothing before reuse.
Eye contact:	Wash immediately with large amounts of water for 15 minutes, lifting the upper and lower lids until no evidence of product remain. Get medical attention.
Ingestion:	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed: Risk of serious damage to eyes.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable extinguishing media: Carbon Dioxide (CO₂), Dry chemical, Foam, Water Fog

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread fire.

Specific hazards arising from the chemical: Vapors released in fire conditions may be toxic, irritating and corrosive

Hazardous combustion products may include: Carbon oxides, sulfur oxides and irritating vapors.

Special protective equipment and precautions for fire-fighters: Firefighters should be equipped with protective clothing and self-contained breathing apparatus to protect against potentially toxic and irritating vapors. In case of fire or explosion, keep unnecessary people away. Isolate hazard area and prevent any entry by non-emergency personnel. Stay upwind, out of low areas and ventilate closed spaces before entering.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. (See Section 8)

Methods and materials for containment and cleaning up: Do not empty into drains or waters. Do not touch or walk through the spilled material; stop leak if you can do it without risk. Take up with sand or other non-combustible absorbent material or suitable vacuum and place in labeled sealable containers. Immediately consult your environmental supervisor.

Recommended Decontamination Facilities: Eye bath and water washing facilities.

SECTION 7: Handling and Storage

Precautions for safe handling: Keep away from sources of ignition. No smoking. Observe good industrial hygiene practices. Immediately remove all contaminated clothing. Avoid contact with eyes and skin. Inhalation of vapors and aerosols must be absolutely prevented. Employees should wash their hands and face before eating and drinking and shower thoroughly before leaving work. Keep away from food and drink stuffs.

Conditions for safe storage, including any incompatibles: Keep container tightly closed and in a well-ventilated place. Store in accordance with all applicable local, state, national and international regulations.

SECTION 8: Exposure controls/personal protection

Control Parameters**Occupational exposure limits****US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Dimethyl sulfoxide (67-68-5)	Not Established	Not Established
Benzaldehyde (100-52-7)	Not Established	Not Established

ACGHI Threshold Limit Values

Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Dimethyl sulfoxide (67-68-5)	Not Established	Not Established
Benzaldehyde (100-52-7)	Not Established	Not Established

Other Exposure Limits:

Dimethyl sulfoxide:
8-Hr (AIHA WEEL-TWA): 250 ppm

Benzaldehyde:
8-Hr (AIHA WEEL-TWA): 2 ppm

(AIHA: American Industrial Hygiene Association,
WEEL: Workplace Environmental Exposure Levels,
TWA: Time-Weighted Average)

Appropriate engineering controls: Use local ventilation.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Protective eye-goggles with side-protection shield.

Skin and Hand protection: Long-sleeve shirts, pants, gloves (e.g. polyethylene/ethylene vinyl alcohol) and boots are recommended. Impervious suits are recommended when the potential for dermal contact is significant.

Respiratory protection: NIOSH-approved organic-vapor respirator, SCBA or SAR.

Other: Overalls, apron or other protective clothing.

Thermal hazards: Not available

SECTION 9: Physical and chemical properties

Appearance:

Physical state: Liquid
Form: Liquid
Color: Slightly hazy to clear green or grey

Odor:

Typical

Odor threshold:

Not Available

pH:

Melting point/freezing point: Not Available

Initial Boiling point/Boiling Range: Not Available

Flash point: 88 °C, TCC

Other information-Flammability

Evaporation rate: Not Available

Flammability (solid, gas): Not Available

Upper/lower flammability or explosive limits

Flammability limit – lower: Not available

Flammability limit – upper: Not Available

Explosive limit – lower: Not available

Explosive limit – upper: Not available

Vapor pressure: Not available

Vapor density: Not available

Relative density (Specific gravity): 1.16 @ 68 °F (20 °C)

Solubilities (water, other): Soluble (in Water)

Partition coefficient (n-octanol/water): Not Available

Auto-ignition temperature: Not Available

Decomposition temperature: No thermal decomposition is anticipated when stored and handled correctly

Viscosity: Not Available

Other information

Bulk density: Not Available

VOC (Weight %): Not Available

SECTION 10: Stability and Reactivity

Reactivity: This product is stable and non reactive under normal conditions of use, storage and transport.

Chemical stability: This product is anticipated to be stable under normal use and storage conditions.

Possibility of hazardous reactions: Not known to cause any hazardous reactions.

Conditions to avoid: Heat, sparks, other sources of ignition and temperature extremes.

Incompatible materials: Strong oxidizing and reducing agents. Acids.

Hazardous decomposition Products: This product contains components which may decompose to release: methanethiol, formaldehyde, water, bis (methylthio) methane, dimethyl disulfide, dimethyl

sulfone, dimethyl sulfide, sulfur dioxide, oxides of carbon, nitrogen, sulfur and other compounds.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	Yes. May cause irritation of the nose throat and respiratory tract.
Ingestion:	Yes. May cause irritation of the gastrointestinal tract.
Skin:	Yes, skin contact and absorption are possible.
Eye:	Yes. Risk of serious damage to eyes.

Symptoms related to the physical, chemical, and toxicological characteristics: May cause serious eye damage. May cause irritation to nose and throat if inhaled. Skin sensitization (an allergic reaction) may develop. Inhalation may lead to dizziness, nausea, unconsciousness and other narcotic effects.

Acute toxicity:

Components

N-Cyanoguanidine (CAS 461-58-5)

Oral LD50 (rat)	>10000 mg/kg (bw)
Dermal LD50 (rabbit)	>2000 mg/kg
Skin corrosion/irritation	Not classified
Serious eye damage	Not classified
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Not classified
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Not classified
Further information	Not applicable

Dimethyl sulfoxide (CAS 67-68-5)

Oral LD50 (male rat)	14500 mg/kg
Skin LD50 (rabbit)	5000 mg/kg
Inhalation Gas LD50 (rat)	40250 ppm
Skin corrosion/irritation	Not classified
Serious eye damage	Not classified
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Not classified
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified

Chronic effects	Not classified
Further information	Not applicable

Benzaldehyde (CAS 100-52-7))

Oral LD50 (rat/adult)	1,430 mg/kg
Dermal LD50 (rabbit/adult)	>2000 mg/kg (based on benzoic acid)
Inhalation LC50 (rat/adult)	>1<5 mg/l (4 hours)

Skin corrosion/irritation	Not classified
Serious eye damage	Category 2A-causes serious eye irritation
Respiratory sensitization	Not classified
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity, single exposure	Category 3-may cause respiratory irritation.
Specific target organ toxicity, repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic effects	Not classified
Further information	Not applicable

SECTION 12: Ecological information**Ecotoxicity**

Product data: Not available

Ingredient Information:

Dicyandiamide

LC50, Oncorhynchus mykiss (rainbow trout) 7700 mg/l

EC50, 48h, water flea (Daphnia magna) 3177 mg/l

Dimethyl sulfoxide

LC50, rainbow trout, 96h 35000 mg/l

EC50, water flea (Daphnia pulex) 27500 mg/l

EC50, algae (Lepomis macrochirus) 96h >400000 mg/l

Benzaldehyde

LC50, fish 96 hour 1.07 mg/l

Algae 96 hour EC50 23.1 mg/l

Invertebrates 48 hour EC50 16.2 mg/l

Persistence and degradability Product Data Not Available

Bioaccumulative potential Product Data Not Available

Mobility in soil Product Data Not Available

Mobility in general
Other adverse effects

Product Data Not Available
 Product Data Not Available

SECTION 13: Disposal considerations

Disposal instructions:

Do not allow this material to drain into sewers or water supplies. Dispose of in accordance with all applicable regulations. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport Information

	DOT (Domestic Surface Transport)	IMO/IMDG	ICAO/IATA
UN Number:	NA1993	NA1993	NA1993
UN proper:	Not regulated	Combustible liquid,	Combustible liquid,
Shipping name		n.o.s	n.o.s.
Transport hazard:	DOT Hazard Class:	IMDG:	Air Class:
Class(es)	Combustible liquid	Not Applicable	Not Applicable
	DOT LABEL:		
	<119 gallons: Not regulated		
	>119 gallons: Combustible		
Packing group:	III	III	III
IMDG	Marine Pollutant: No		

SECTION 15: Regulatory Information

US Regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1050) Not listed.

US EPA Tier II Hazards	Fire:	Yes
	Pressure Hazard:	No
	Reactivity Hazard:	No
	Immediate (acute):	No
	Delayed (Chronic):	No

EPCRA 311/312 Chemicals and RQs: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals: To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated.

Safe Drinking Water Act: Not regulated

US State Regulations

California Proposition 65-This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

New Jersey Right To Know Components:	Dimethyl sulfoxide	CAS 67-68-5
	Cyanoguanidine	CAS 461-58-5

Pennsylvania Right To Know Components:	Cyanoguanidine	CAS 461-58-5
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INVENTORIES

Canada	Domestic Substances List (DSL)	All components on inventory.
US	Toxic Substances Control Act (TSCA) Inventory	All components on inventory.

SECTION 16: Other Information

Revision Date: 10-09-2015

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