



VAN DIEST SUPPLY COMPANY

Distributor and Manufacturer of Agricultural Chemicals

SAFETY DATA SHEET

1. IDENTIFICATION

1.1 PRODUCT IDENTIFIER:	CORNBELT® NITROSTAY™
1.2 ALTERNATE NAME(S):	None
1.3 SUPPLIER'S DETAILS:	Van Diest Supply Company 1434 220th Street Post Office Box 610 Webster City, IA 50595-0610
1.4 EMERGENCY PHONE NUMBER:	FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT - CALL CHEMTREC - DAY OR NIGHT - 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

GHS-US CLASSIFICATION

Flammable liquids, Category 4	H227 - Combustible liquid
Skin corrosion/irritation, Category 2	H315 - Causes skin irritation
<i>Full text of H statements - See Section 16</i>	

2.2 GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS:

GHS US LABELING

Hazard pictograms (GHS US):



Signal word (GHS US):

Warning

Hazard statements (GHS US):

H227 - Combustible liquid

H315 - Causes skin irritation

Precautionary statements (GHS US):

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P264 - Wash hands, forearms and face thoroughly after handling.

P280 - Wear protective clothing, eye protection, face protection.

P302+P352 - If on skin: Wash with plenty of water.

P321 - Specific treatment (see supplemental first aid instruction on this label).

P332+P313 - If skin irritation occurs: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P370+P378 - In case of fire: Use CO₂, dry powder, sand, foam to extinguish.

P403+P235 - Store in a well-ventilated place. Keep cool.

P501 - Dispose of contents/container at a licensed hazardous waste facility in accordance with state and local regulations.

2.3 OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION:

No additional information available.

2.4 UNKNOWN ACUTE TOXICITY (GHS US):

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 SUBSTANCES:**

Not applicable

3.2 MIXTURES:

CHEMICAL NAME	CAS Number	% in Formulation	GHS-US Classification
dimethyl sulfoxide	67-68-5	30 - 80	Flam. Liq. 4, H227
cyanoguanidine	461-58-5	27 - 30	Not classified
benzaldehyde	100-52-7	0.1 - 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Aquatic Acute 3, H402

Full text of hazard classes, H- and EUH-statements: See Section 16

4. FIRST AID MEASURES**4.1 DESCRIPTION OF FIRST AID MEASURES:**

General Advice: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

EYE CONTACT:	Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
SKIN CONTACT:	Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
INHALATION:	Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
INGESTION:	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center or a doctor if you feel unwell.

4.2 MOST IMPORTANT SYMPTOMS/EFFECTS (ACUTE AND DELAYED):**Potential adverse human health effects and symptoms:**

Based on available data, the classification criteria are not met.

Symptoms/effects:

Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after skin contact:

Irritation.

4.3 IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT, IF NECESSARY:

Treat symptomatically.

5. FIREFIGHTING MEASURES**5.1 SUITABLE EXTINGUISHING MEDIA:**Sand, water spray, dry powder, foam, CO₂**5.2 UNSUITABLE EXTINGUISHING MEDIA:**

Do not use a heavy water stream.

5.3 SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:**Fire hazard:**

Combustible liquid

Explosion hazard:

May form flammable/explosive vapor-air mixture.

Hazardous decomposition products in case of fire:

Toxic fumes may be released.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:**Firefighting instructions:**

Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent firefighting water from entering the environment.

5. FIREFIGHTING MEASURES (continued)**5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS (continued):**

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

6. ACCIDENTAL RELEASE MEASURES**6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:**

General measures: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

For non-emergency personnel:

Protective equipment: Safety glasses, gloves, protective clothing

Emergency procedures: Ventilate spillage area. Evacuate unnecessary personnel. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

For emergency responders:

Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information, refer to Section 8 - Exposure Controls/Personal Protection.

Emergency procedures: Ventilate area.

6.2 ENVIRONMENTAL PRECAUTIONS:

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANUP:

For containment: Contain released product, collect/pump into suitable containers.

Methods for cleaning up: Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Notify authorities if product enters sewers or public waters.

Other information: Dispose of materials or solid residues at an authorized site.

6.4 REFERENCE TO OTHER SECTIONS:

See Section 8 - Exposure Controls/Personal Protection. For further information, refer to Section 13 - Disposal Considerations.

7. HANDLING AND STORAGE**7.1 PRECAUTIONS FOR SAFE HANDLING:**

Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Wear personal protective equipment. Avoid contact with skin and eyes.

7.2 HYGIENE MEASURES:

Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling.

7.3 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Technical measures: Proper grounding procedures to avoid static electricity should be followed.

Storage conditions: Keep only in original container in a cool, well ventilated area. Keep container closed when not in use. Store in a well-ventilated place. Keep cool.

Incompatible products: Strong bases. Strong acids.

Incompatible materials: Sources of ignition. Direct sunlight. Heat sources.

Storage temperature: 25 (5-42) °C [77 (41-107.6)] °F

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

30% DCD Colorless:	No additional information available.
dimethyl sulfoxide (67-68-5):	No additional information available.
cyanoguanidine (461-58-5):	No additional information available.
benzaldehyde (100-52-7):	No additional information available.

8.2 APPROPRIATE ENGINEERING CONTROLS:

Appropriate engineering controls:	Ensure good ventilation of the work station.
Environmental exposure controls:	Avoid release to the environment.

8.3 PERSONAL PROTECTIVE EQUIPMENT:

The following recommendations are suitable for small, incidental contact with this material. Recommendations for commercial or on-farm application of this chemical may be found on the container label. Avoid all unnecessary exposure.

Hand protection:	Wear protective gloves.
Eye protection:	Chemical goggles or safety glasses. Safety glasses.
Skin and body protection:	Wear suitable protective clothing.
Respiratory protection:	Wear appropriate mask.

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Physical state	Liquid
Color	Colorless
Odor	Characteristic odor
Odor threshold	No data available
pH	7.2
Melting point	Not applicable
Freezing point	≤ 0 °C (32 °F)
Boiling point	≥ 189 °C (372.2 °F)
Flash point	90 °C approximate (194 °F approximate)
Relative evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	Combustible liquid
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	No data available
Density	1.171 g/mL
Solubility	Soluble in water
Partition coefficient n-octanol/water (Log P _{OW})	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive limits	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES (continued)**9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES (continued):**

Explosive properties	No data available
Oxidizing properties	No data available

9.2 OTHER INFORMATION:

No additional information available.

10. STABILITY AND REACTIVITY**10.1 REACTIVITY:**

The product is nonreactive under normal conditions of use, storage and transport.

10.2 CHEMICAL STABILITY:

Combustible liquid. May form flammable/explosive vapor-air mixture.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Not established.

10.4 CONDITIONS TO AVOID:

Direct sunlight. Extremely high or low temperature. Open flame. Overheating. Heat. Sparks. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

10.5 INCOMPATIBLE MATERIALS:

Strong acids. Strong bases.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

11. TOXICOLOGICAL INFORMATION**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:**

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified

dimethyl sulfoxide (67-68-5)	
LD ₅₀ oral rat	28300 mg/kg bodyweight (equivalent or similar to OECD 401, Rat, Male/female, Experimental value, Oral, 14 days)
LD ₅₀ dermal rat	40000 mg/kg bodyweight (Rat, Male/female, Experimental value, Dermal, 14 days)
cyanoguanidine (461-58-5)	
LD ₅₀ oral rat	> 30000 mg/kg bodyweight (equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral)
LD ₅₀ dermal rabbit	> 2000 mg/kg bodyweight (equivalent or similar to OECD 402, 24 h, Rabbit, Male/female, Experimental value, Dermal, 14 days)
dimethyl sulfoxide (67-68-5)	
LD ₅₀ oral rat	1430 mg/kg bodyweight (equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 days)
LD ₅₀ dermal rabbit	> 2000 mg/kg bodyweight (24 h, Rabbit, Read-across, Dermal, 14 days)
LC ₅₀ inhalation rat	1-5 mg/L [OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male/female, Experimental value, inhalation (mixture of vapor and aerosol), 14 days]

Skin corrosion/irritation:	Causes skin irritation pH: 7.2
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11. TOXICOLOGICAL INFORMATION (continued)**11.1 INFORMATION ON TOXICOLOGICAL EFFECTS (continued):**

Serious eye damage/irritation:	Not classified pH: 7.2
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
STOT-single exposure:	Not classified
STOT-repeated exposure:	Not classified
Aspiration hazard:	Not classified
Viscosity, kinematic:	No data available
Potential adverse human health effects/symptoms:	Based on available data, the classification criteria are not met.
Symptoms/effects:	Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after skin contact:	Irritation

12. ECOLOGICAL INFORMATION**12.1 ECOLOGY - GENERAL:**

Not classified as dangerous for the environment according to the criteria of Directive 67/548/EEC. The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

dimethyl sulfoxide (67-68-5)	
LC ₅₀ fish 1	> 25 g/L (OECD 203: Fish, Acute Toxicity Test, 96 h, <i>Danio rerio</i> , Static system, Fresh water, Experimental value, Lethal)
EC ₅₀ <i>Daphnia</i> 1	24.6 g/L (OECD 202: <i>Daphnia</i> sp., Acute Immobilization Test, 48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value)
ErC ₅₀ algae	17 g/L (OECD 201: Alga, Growth Inhibition Test, 72 h, <i>Pseudokirchneriella subcapitata</i> , Static system, Fresh water, Experimental value, Nominal concentration)
cyanoguanidine (461-58-5)	
LC ₅₀ fish 1	7700 ppm (96 h, <i>Oncorhynchus mykiss</i> , Static system, Fresh water, Experimental value, Nominal concentration)
EC ₅₀ <i>Daphnia</i> 1	3177 mg/L (OECD 202: <i>Daphnia</i> sp., Acute Immobilization Test, 48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value, Locomotor effect)
ErC ₅₀ algae	> 1000 mg/L (OECD 201: Alga, Growth Inhibition Test, 72 h, <i>Pseudokirchneriella subcapitata</i> , Static system, Fresh water, Experimental value, Nominal concentration)
benzaldehyde (100-52-7)	
LC ₅₀ fish 1	12.4 mg/L (Equivalent or similar to OECD 203, 96 h, <i>Pimephales promelas</i> , Flow-through system, Fresh water, Experimental value, Lethal)
EC ₅₀ <i>Daphnia</i> 1	50 mg/L (24 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value, Locomotor effect)

12.2 PERSISTENCE AND DEGRADABILITY:

30% DCD Colorless	
Persistence and degradability	Biodegradable in the soil. Not established.

12. ECOLOGICAL INFORMATION (continued)**12.2 PERSISTENCE AND DEGRADABILITY (continued):**

dimethyl sulfoxide (67-68-5)	
Persistence and degradability	Not readily biodegradable in water.
cyanoguanidine (461-58-5)	
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
benzaldehyde (100-52-7)	
Persistence and degradability	Biodegradable in soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.62 g O ₂ /g substance
Chemical oxygen demand (COD)	1.98 g O ₂ /g substance
ThOD	2.42 g O ₂ /g substance
BOD (% of ThOD)	0.67

12.3 BIOACCUMULATIVE POTENTIAL:

30% DCD Colorless	
Bioaccumulative potential	Not established.
dimethyl sulfoxide (67-68-5)	
BCF other aquatic organisms 1	3.16 (QSAR)
Partition coefficient n-octanol/water (Log P _{ow})	-1.35 (Experimental value, 20 °C)
Bioaccumulative potential	Not bioaccumulative.
cyanoguanidine (461-58-5)	
Partition coefficient n-octanol/water (Log P _{ow})	-1 [Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C]
Bioaccumulative potential	Not bioaccumulative.
benzaldehyde (100-52-7)	
BCF other aquatic organisms 1	4.2-7.8 (Literature study, Estimated value)
Partition coefficient n-octanol/water (Log P _{ow})	1.4 [Experimental value, OECD 117: Partition Coefficient (n-octanol/water): HPLC method, 25 °C]
Bioaccumulative potential	Low potential for bioaccumulation (Log K _{ow} < 4)

12.4 MOBILITY IN SOIL:

30% DCD Colorless	
Ecology-soil	Not toxic to plants.
dimethyl sulfoxide (67-68-5)	
Surface tension	43.5 mN/m (20 °C, 100 vol %)
dimethyl sulfoxide (67-68-5)	
Partition coefficient n-octanol/water (Log K _{oc})	0.64 (Log K _{oc} , SRC PCKOCWIN v1.66, Calculated value)
Ecology-soil	Highly mobile in soil.
cyanoguanidine (461-58-5)	
Partition coefficient n-octanol/water (Log K _{oc})	0.638-0.951 (Log K _{oc} , SRC PCKOCWIN v2.0, Calculated value)
Ecology-soil	Highly mobile in soil.

12. ECOLOGICAL INFORMATION (continued)**12.4 MOBILITY IN SOIL (continued):**

benzaldehyde (100-52-7)	
Surface tension	70.5 nM/m (20 °C, 1g/L, OECD 115: Surface Tension of Aqueous Solutions)
Partition coefficient n-octanol/water (Log K _{oc})	1.75 (Log K _{oc})
Ecology-soil	Highly mobile in soil.

12.5 OTHER ADVERSE EFFECTS:**Other information:**

No other effects known. Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS**13.1 DISPOSAL METHODS:****Waste treatment methods:**

Dispose of contents/containers in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations:

Dispose of contents/containers in hazardous or special waste collection point, an approved disposal plant, a licensed hazardous waste disposal contractor or authorized waste collection site in accordance with local, regional and/or international regulation, except for empty clean containers which can be disposed of as non-hazardous waste.

Additional information:

Handle empty containers with care because residual vapors are flammable.

Ecology-waste materials:

Avoid release to the environment.

14. TRANSPORT INFORMATION**Department of Transportation (DOT)**

In accordance with DOT

Transport document description:

UN1993 Flammable liquids, n.o.s. (Contains Dimethyl Sulfoxide), 3, III

UN-No. (DOT):

UN1993

Proper shipping name (DOT):

Flammable liquids, n.o.s.

Contains Dimethyl Sulfoxide

Class (DOT):

3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packaging group (DOT):

III - Minor Danger

Hazard labels (DOT):

3 - Flammable liquid

**DOT Packaging Non Bulk (49 CFR 173.xxx):**

203

DOT Packaging Bulk (49 CFR 173.xxx):

242

DOT Symbols:

G - Identifies PSN requiring a technical name

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27):

60 L (15.85 gallons)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75):

220 L (58.12 gallons)

Other information:

192 gallons - When shipping this product and the container contains more than 192 gallons, then this container MUST be labeled in UN1993, Flammable Liquid, NOS, 3, PGIII (Contains Dimethyl Sulfoxide) and a large red diamond needs to be placed onto the container along with the proper shipping name stated. All paperwork must be labeled accordingly. Less than 192 gallons, the product can go out as non-hazardous.

14. TRANSPORT INFORMATION (continued)

Transportation of Dangerous Goods:	Not applicable
Transport by sea:	Not applicable
Air transport:	Not applicable

15. REGULATORY INFORMATION**15.1 US FEDERAL REGULATIONS:****dimethyl sulfoxide (67-68-5)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

cyanoguanidine (461-58-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

benzaldehyde (100-52-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2 US State Regulations:**dimethyl sulfoxide (67-68-5)**

U.S. - New Jersey - Right to Know Hazardous Substance Label

benzaldehyde (100-52-7)

U.S. - New Jersey - Right to Know Hazardous Substance Label

16. OTHER INFORMATION

Other Information:	Cyanoguanidine is the chemical name for the common name of DCD or Dicyandiamide, all using the CAS# 461-58-5.	
Full text of H-statements:	H227	Combustible liquid
	H302	Harmful if swallowed
	H315	Causes skin irritation
	H402	Harmful to aquatic life
NFPA health hazard:	1 - Materials that, under emergency conditions, can cause significant irritation.	
NFPA fire hazard:	1 - Materials that must be preheated before ignition can occur.	
NFPA reactivity:	0 - Material that in themselves are normally stable, even under fire conditions.	
NFPA specific hazard:	None	

**Hazard Rating**

Health:	1 Slight Hazard - Irritation or minor reversible injury possible.
Flammability:	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi-solids having a flash point above 200 °F. (Class IIIB)
Physical:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection:	C C - Safety glasses, Gloves, Synthetic apron

SDS VERSION: 5/26/2023

The information and recommendations contained in this Safety Data Sheet are understood to be correct by Van Diest Supply Company. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. Information in this SDS follows different criteria from, and serves a different purpose than the product labeling.