

# SAFETY DATA SHEET

## SECTION 1: Identification

**Product identifier:** DRIVE-N

**Other means of identification:** none

**SDS number** - EA0077-1

**Recommended use:** Anhydrous ammonia injection.

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

### Manufacturer/Importer/Supplier/Distributor information

**Company name:** INNOVAR AG

**Address:** 1201 6<sup>th</sup> Avenue West, Suite 302  
Bradenton, Florida 34205 USA

**Telephone:** +1 866-412-1337 (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

### Classification of the substance or mixture

#### GHS-US Classification

Eye irritation	Category 2B
Skin irritation	Category 2

#### Label elements

**Hazard symbol(s):**



**Signal word:** WARNING

**Hazard statement(s):** Causes eye irritation. Causes skin 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.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 Wash hands, forearms and face thoroughly after handling  
 Wear eye protection, face protection, skin protection, clothing protection  
 If on skin: wash with plenty of water

- 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

**This product is a mixture.**

#### Composition---Information On Ingredients

<u>Chemical name</u>	<u>Common Name</u>	<u>CAS number</u>	<u>%</u>
N-Cyanoguanidine	Dicyandiamide	461-58-5	20-50
Dimethyl sulfoxide	DMSO	67-68-5	30-80

**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:** Causes eye and skin irritation.

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

#### **SECTION 5: Fire-fighting measures**

**Fire hazard:** Combustible liquid.

**Suitable extinguishing media:** Carbon Dioxide (CO<sub>2</sub>), 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:** 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.

**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:** Incompatibles include strong oxidizing and reducing agents. Strong acids and bases. Keep container tightly closed and in a well-ventilated place. Store in accordance with all applicable local, state, national and international regulations. Avoid temperature extremes during storage. Store at temperatures between 0-38°C

(32-100°F). If the product is subjected to temperature below 0° C for an extended period of time, it may result in increased viscosity or some gel formation.

## 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

#### ACGIH Threshold Limit Values

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

#### Other Exposure Limits:

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

<b>Physical state:</b>	Liquid
<b>Form:</b>	Liquid
<b>Color:</b>	Clear to light yellow
<b>Odor:</b>	Typical
<b>Odor threshold:</b>	Not Available
<b>pH:</b>	8-10.4 (10% in water)
<b>Melting point/freezing point:</b>	Not Available
<b>Initial Boiling point/Boiling Range:</b>	Not Available
<b>Flash point:</b>	101 °C (tag closed cup)
<b>Other information-Flammability</b>	Not Available
<b>Evaporation rate:</b>	Not Available
<b>Flammability (solid, gas):</b>	Not Available
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit – lower:</b>	Not Available
<b>Flammability limit – upper:</b>	Not Available
<b>Explosive limit – lower:</b>	Not Available
<b>Explosive limit – upper:</b>	Not Available
<b>Vapor pressure:</b>	Not Available
<b>Vapor density:</b>	Not Available
<b>Relative density (Specific gravity):</b>	1.17 @ 20 deg C
<b>Solubilities (water, other):</b>	Soluble (in Water)
<b>Partition coefficient (n-octanol/water):</b>	Not Available
<b>Auto-ignition temperature:</b>	Not Available
<b>Decomposition temperature:</b>	No thermal decomposition is anticipated when stored and handled correctly
<b>Viscosity:</b>	Not Available
<b>Other information</b>	
<b>Bulk density:</b>	Not Available
<b>VOC (Weight %):</b>	Not Available

#### SECTION 10: Stability and Reactivity

<b>Reactivity:</b>	This product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability:</b>	This product is anticipated to be stable under normal use and storage conditions.
<b>Possibility of hazardous reactions:</b>	Not known to cause any hazardous reactions.
<b>Conditions to avoid:</b>	Heat, sparks, other sources of ignition and temperature extremes.
<b>Incompatible materials:</b>	Strong oxidizing and reducing agents. Strong acids and bases.
<b>Hazardous decomposition Products:</b>	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.

<b>SECTION 11: Toxicological information</b>
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**Information on likely routes of exposure**

<b>Inhalation:</b>	Yes. May cause irritation of the nose throat and respiratory tract.
<b>Ingestion:</b>	Yes. May cause irritation of the gastrointestinal tract.
<b>Skin:</b>	Yes, skin contact and absorption are possible.
<b>Eye:</b>	Yes. May cause irritation 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

## 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

<b>Persistence and degradability</b>	Product Data Not Available
<b>Bioaccumulative potential</b>	Product Data Not Available
<b>Mobility in soil</b>	Product Data Not Available
<b>Mobility in general</b>	Product Data Not Available
<b>Other adverse effects</b>	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 empty.

## SECTION 14: Transport Information

**UN Number:** Not Regulated.

**Proper Shipping name (DOT):** Not Regulated.

**Transport Hazard Class (DOT):** Not Regulated.

**Packing Group:** Not Regulated.

**TDG:** Not Regulated.

#### IMO/IMDG

**UN Number:** Not Regulated.

**UN Proper Shipping name:** Not Regulated.

**Packing Group:** Not Regulated.

**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.

**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

**Canada Regulations**

Controlled Drugs and Substances Act Not Regulated  
Export Control List (CEPA 1999, Schedule 3) Not Listed  
Precursor Control Regulations Not Regulated

**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: 7-19-2018



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