

SAFETY DATA SHEET



1. COMPANY AND PRODUCT INFORMATION

Product identifier: N-Edge® Soil

SDS number: EA0004

Recommended use: Fertilizer coating

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

Manufacturer/Importer/Supplier/Distributor information

Company name: CHS Inc.

Address: 5500 Cenex Drive
Inver Grove Heights, MN 55077

Telephone: (800) 232-3639
International Dialing Code 001
(651) 355-6000

Emergency: Call CHEMTREC day or night
Within USA/Canada 1-800-424-9300
Outside USA/Canada +1 703-527-3887 (collect calls accepted)

N-Edge® soil

2. HAZARD(S) IDENTIFICATION

Health hazards: Flammable Liquid Category 3
Skin Irritant Category 2

Label elements
Hazard symbol(s):



Signal word: Warning

Hazard statement(s): Flammable liquid and vapor. 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 and face protection. Keep away from heat/sparks/open flame and hot surfaces. Use explosion-proof electrical equipment, ventilation and lighting. No smoking near product or blending area. Keep container grounded and tightly closed. Take precautionary measures against static discharge and use only non-sparking tools.

Response: After use, thoroughly wash hands, forearms and face. If exposure on skin, wash with plenty of water. If skin irritation occurs, get medical advice. Remove any exposed clothing and wash thoroughly before reuse. In case of fire, use CO₂, dry powder, sand and/or foam to extinguish.

Storage: Store in a well-ventilated place and keep cool.

Disposal: Dispose of contents/container to a licensed hazardous waste facility in accordance with all applicable local/state/national/international laws and regulations.

3. COMPOSITION OF CHEMICALS (INGREDIENTS)

Hazardous components

<u>Chemical name</u>	<u>Common Name</u>	<u>CAS number</u>	<u>%</u>
Dimethyl sulfoxide	DMSO	67-68-5	30-80
Dicyandiamide	Cyanoguanidine	461-58-5	27-29
2 (2-aminoethoxy) ethanol		929-06-6	0.1-5

Non-Hazardous components

<u>Chemical name</u>	<u>Common Name</u>	<u>CAS number</u>	<u>%</u>
Non-hazardous dye		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.

4. FIRST AID MEASURES

- General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice.
- Inhalation:** Bring person to fresh air and keep comfortable for breathing. Allow breathing of fresh air and allow to rest.
- Skin contact:** Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Remove all contaminated clothing. Wash skin with plenty of water. If skin irritation occurs, get medical advice.
- Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison control center or a doctor if you feel unwell.
- Eye contact:** Rinse immediately with plenty of water. If pain, blinking or redness persist, obtain medical attention. Rinse eyes with water as precaution.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Carbon Dioxide (CO₂), Dry Powder, Foam, Water Spray, Sand.

Unsuitable extinguishing media: Do NOT use a heavy water stream as an extinguisher.

Specific hazards arising from the chemical: Combustible liquid. May form flammable explosive vapor-air mixture. This product is non-reactive under normal conditions of use, storage and transport.

Advice for firefighters: Firefighters should be equipped with protective clothing and equipment and self-contained breathing apparatus to protect against potentially toxic and irritating vapors. Isolate hazard area and prevent any entry by non-emergency personnel. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. Remove ignition sources and ventilate spillage area. Use special care to avoid static electric charges. No open flames and no smoking in area. Avoid contact with skin and eyes.

Methods and materials for containment and cleaning up: Contain released substance, pump into suitable containers. Dispose of materials or solid residues at an authorized site. Avoid release to the environment.

Recommended Decontamination Facilities: Eye bath and water washing facilities.

7. HANDLING AND STORAGE

Precautions for safe handling: Ensure good ventilation of work and process area to prevent formation of vapor. Wear personal protective equipment and avoid contact with skin and eyes. Wash hands and other exposed area with mild soap and water after handling the product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking or open flames nearby. Wash all exposed or contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibles: Keep original container tightly closed when not in use. Store in well-ventilated, cool place and in accordance with all applicable local, state, national and international regulations. Optimal storage temperature is 77°F. Avoid storage in direct sunlight.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Control Parameters

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

Substance	PEL-TWA (8 hour)	PEL-STEL (15 min)
Dicyandiamide (461-58-5)	Not Applicable	Not Applicable
2(2-aminoethoxy)ethanol (929-06-6)	Not Applicable	Not Applicable
Dimethyl sulfoxide (67-68-5)	Not Applicable	Not Applicable

ACGIH Threshold Limit Values

Substance	TLV-TWA (8 hour)	TLV-STEL (15 min)
Dicyandiamide (461-58-5)	Not Applicable	Not Applicable
2(2-aminoethoxy)ethanol (929-06-6)	Not Applicable	Not Applicable
Dimethyl sulfoxide (67-68-5)	Not Applicable	Not Applicable

Appropriate engineering controls:	Ensure good ventilation of the work area.
Personal protective equipment:	Avoid all unnecessary exposure. Protective eye-goggles or safety glasses with side-protection shield.
Skin and Hand protection:	Wear suitable protective clothing, including long-sleeve shirts, pants, safety glasses, gloves (e.g. polyethylene/ethylene vinyl alcohol) and boots are recommended.
Respiratory protection:	Wear appropriate mask.
Environmental exposure controls:	Avoid release to the environment.
Other information:	Do not eat, drink or smoke during use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	
Physical state:	Liquid
Color:	Blue
Odor:	Characteristic odor
Odor threshold:	Not Available
pH:	7.5-10.5
Melting point:	Not Available
Freezing point:	32°F (≤0°C)
Boiling point:	372°F (≥189°C)
Flash point:	149°F (65°C) Approximate

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
Density:	1.164 g/mL
Relative density (Specific gravity):	1.157 @ 20°C (68°F)
Solubilities (water, other):	Soluble in water
Partition coefficient (n-octanol/water):	Not Available
Auto-ignition temperature:	Not Available
Decomposition temperature:	Not Available
Viscosity:	Not Available
Other information	
Bulk density:	Not Available
VOC (Weight %):	Not Available

10. STABILITY AND REACTIVITY

Reactivity:	This is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability:	This is a combustible liquid and may form flammable/explosive vapor-air mixture.
Possibility of hazardous reactions:	Not known to cause any hazardous reactions.
Conditions to avoid:	Direct sunlight, extreme high or low temperatures, open flame, over heating, heat, and sparks. Avoid contact with hot surfaces.
Incompatible materials:	Strong oxidizing and reducing agents. Acids.
Hazardous decomposition Products:	This contains components which may decompose to release: fume, carbon monoxide, carbon dioxide, and may release flammable gases.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Components

Dimethyl sulfoxide (67-68-5)	
LD50 dermal rat	40000 mg/kg bodyweight (Rat; Experimental value)
ATE US (oral)	14500 mg/kg bodyweight
2(2-aminoethoxy)ethanol (929-06-6)	
LD50 oral rat	3000 mg/kg (Rat)
LD50 dermal rabbit	1250 mg/kg (Rabbit)
ATE US (oral)	3000 mg/kg bodyweight
ATE US (dermal)	1250 mg/kg bodyweight
Dicyandiamide (461-58-5)	
LD50 oral rat	> 5000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 0.26 mg/l/4h (Rat)

Skin corrosion/irritation	Causes skin irritation, pH 7.5-10.5
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
Potential adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	Irritation

12. ECOLOGICAL INFORMATION

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 or to cause long-term adverse effects in the environment.

Ingredient Information:

Dicyandiamide (461-58-5)	
LC50, fish 1	7700 mg/l (LC50, 96h)
EC50, Daphnia 1	3177 mg/l (EC50, 48h)

Persistence and degradability

Biodegradable in the soil.

Bioaccumulative potential

Product Data Not Available

Mobility in soil

Product Data Not Available

Mobility in general

Product Data Not Available

Other adverse effects

Product Data Not Available

13. DISPOSAL CONSIDERATIONS

Disposal instructions:

Do not allow this material to drain into sewers or water supplies. 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. Handle empty containers with care because residual vapors are flammable. Avoid release into environment.

14. TRANSPORT INFORMATION

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

Transport hazard class(es) (DOT)
Hazard labels (DOT)

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



Packing group (DOT)
DOT Packaging Non Bulk (49 CFR 173.xxx)
DOT Packaging Bulk (49 CFR 173.xxx)
DOT Symbols
DOT Special Provisions (49 CFR 172.102)

III - Minor Danger

203

242

G - Identifies PSN requiring a technical name

B1 - If the material has a flash point at or above 100°F (38°C) and below 200°F (93°C), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 100°F (38°C), then the bulk packaging requirements of 173.242 of this subchapter are applicable.

B52 - Notwithstanding the provisions of 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50°C (1.1 bar at 122°F), or 130 kPa at 55°C (1.3 bar at 131°F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.56 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx)
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

150

60L

220L

15. REGULATORY INFORMATION

US Regulations

Dimethyl Sulfoxide is listed on the US TSCA (Toxic Substances Control Act) Inventory.

2(2-aminoethoxy)ethanol (929-06-6) is listed on the US TSCA (Toxic Substances Control Act) Inventory.

US State Regulations

California Proposition 65 - This product does not contain any chemicals known to the 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

INVENTORIES

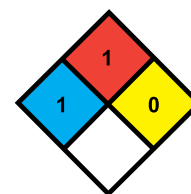
Canada	Domestic Substances List (DSL)	All components on inventory.
US	Toxic Substances Control Act (TSCA) Inventory	All components on inventory.

16. OTHER INFORMATION

Revision Date: 6-8-2016

NFPA Hazards

Health Hazard:	1 Slight - Exposure could cause irritation but only minor residual injury even if no treatment is given.
Flammability:	1 Slight - Must be preheated before ignition can occur.
Reactivity:	0 Minimal - Normally stable and not reactive with water.



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