



# N-Edge

## Safety Data Sheet 40110

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 02/04/2019

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : N-Edge  
Product code : 40110

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.3. Details of the supplier of the safety data sheet

CHS Inc.  
5500 Cenex Drive  
Inver Grove Heights, MN 55077  
T 1-800-232-3639  
[www.chsinc.com](http://www.chsinc.com)

#### 1.4. Emergency telephone number

Emergency number : 1-800-424-9300  
ChemTrec

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Acute Tox. 4 (Oral)	H302
Skin Irrit. 2	H315
Eye Dam. 1	H318
Repr. 2	H361

Full text of H-statements: see section 16

#### 2.2. Label elements

##### GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P264 - Wash hands, forearms and face thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear Eye protection, Face protection, Skin protection. Clothing protection  
P301+P312 - If swallowed: Call a POISON CENTER or doctor/physician if you feel unwell  
P302+P352 - If on skin: Wash with plenty of water  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P310 - Immediately call a POISON CENTER or doctor/physician  
P321 - Specific treatment (see additional precautions on this label)  
P330 - Rinse mouth  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P362 - Take off contaminated clothing and wash before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to a licensed hazardous waste facility in accordance with state and local agencies

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS-US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	GHS-US classification
dimethyl sulfoxide	(CAS No) 67-68-5	10 - 50	Flam. Liq. 4, H227
N-(n-butyl) thiophosphoric triamide (NBPT)	(CAS No) 94317-64-3	10 - 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Eye Dam. 1, H318 Repr. 2, H361
benzaldehyde	(CAS No) 100-52-7	1 - 10	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Aquatic Acute 3, H402

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Allow breathing of fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Not easily combustible.
Explosion hazard	: Not applicable.

### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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#### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
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# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : 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 vapour.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash ... thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Storage temperature : 25 (5 - 42) °C

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

N-Edge	
ACGIH	Not applicable
OSHA	Not applicable
dimethyl sulfoxide (67-68-5)	
ACGIH	Not applicable
OSHA	Not applicable
N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)	
ACGIH	Not applicable
OSHA	Not applicable
benzaldehyde (100-52-7)	
ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : Green

Odour : Characteristic odour

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Odour threshold	: No data available
pH	: 7 - 9.5
Melting point	: No data available
Freezing point	: $\approx$ -23.3 °C (-10 F)
Boiling point	: $\geq$ 100 °C
Flash point	: 108 °C (226 F)
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 1.097 - 1.123 g/l (9.149 - 9.366 pounds per gallon)
Solubility	: Soluble in water. Water: Solubility in water of component(s) of the mixture : • dimethyl sulfoxide: 100 g/100ml (25 °C) • glycerol: 100 g/100ml (25 °C, Complete) • benzaldehyde: 0.3 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases. Oxidizing agent.

### 10.6. Hazardous decomposition products

fume. Carbon dioxide. Carbon monoxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

N-Edge	
ATE US (oral)	500.000 mg/kg bodyweight
dimethyl sulfoxide (67-68-5)	
LD50 dermal rat	40000 mg/kg bodyweight (Rat; Experimental value)
ATE US (dermal)	40000.000 mg/kg bodyweight

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)</b>	
LD50 oral rat	2000 mg/kg
LD50 dermal rat	2000 mg/kg
ATE US (oral)	2000.000 mg/kg bodyweight
ATE US (dermal)	2000.000 mg/kg bodyweight

<b>benzaldehyde (100-52-7)</b>	
LD50 oral rat	1300 mg/kg (Rat)
LD50 dermal rat	> 1250 mg/kg (Rat)
LD50 dermal rabbit	5000 mg/kg (Rabbit)
ATE US (oral)	1300.000 mg/kg bodyweight
ATE US (dermal)	5000.000 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation. pH: 7 - 9.5
Serious eye damage/irritation	: Causes serious eye damage. pH: 7 - 9.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Readily biodegradable 28 days.

<b>N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)</b>	
LC50 fish 1	>= 1140 mg/l Bluegill
EC50 Daphnia 1	>= 290 mg/l

<b>benzaldehyde (100-52-7)</b>	
EC50 Daphnia 1	50 mg/l (EC50; 24 h)
LC50 fish 2	11.2 mg/l (LC50; 96 h; Salmo gairdneri)

### 12.2. Persistence and degradability

<b>N-Edge</b>	
Persistence and degradability	Inherently biodegradable. Not established.

<b>dimethyl sulfoxide (67-68-5)</b>	
Persistence and degradability	Not readily biodegradable in water. Photolysis in the air.

<b>N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)</b>	
Persistence and degradability	Not established.

<b>benzaldehyde (100-52-7)</b>	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil.
Biochemical oxygen demand (BOD)	1.62 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.98 g O <sub>2</sub> /g substance

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>benzaldehyde (100-52-7)</b>	
ThOD	2.42 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.67

### 12.3. Bioaccumulative potential

<b>N-Edge</b>	
Bioaccumulative potential	Not established.

<b>dimethyl sulfoxide (67-68-5)</b>	
BCF fish 1	< 0.4 (BCF)
Log Pow	-1.35 (Experimental value; 20 °C)
Bioaccumulative potential	Bioaccumulation: not applicable.

<b>N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)</b>	
Bioaccumulative potential	Not established.

<b>benzaldehyde (100-52-7)</b>	
BCF other aquatic organisms 1	4.2 - 7.8 (BCF)
Log Pow	1.48 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

<b>dimethyl sulfoxide (67-68-5)</b>	
Surface tension	0.0435 N/m (20 °C; 10 g/l)
Log Koc	Koc, SRC PCKOCWIN v1.66; 4.41; Calculated value; log Koc; SRC PCKOCWIN v1.66; 0.64; Calculated value

<b>benzaldehyde (100-52-7)</b>	
Surface tension	0.040 N/m (20 °C)

### 12.5. Other adverse effects

- Effect on the global warming : No known ecological damage caused by this product.
- Other information : No other effects known. Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

- Waste 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.
- Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT  
Not regulated for transport

### Additional information

- Other information : No supplementary information available.

### ADR

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

**N-Edge**

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

**dimethyl sulfoxide (67-68-5)**

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

**N-(n-butyl) thiophosphoric triamide (NBPT) (94317-64-3)**

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. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

No additional information available

**Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]**

Not classified

**National regulations**

No additional information available

#### 15.3. US State regulations

**dimethyl sulfoxide (67-68-5)**

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

**benzaldehyde (100-52-7)**

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

### SECTION 16: Other information

Revision date

: 02/04/2019

Other information

: Some testing has been conducted to assess the stability and compatibility of this product with certain herbicides and adjuvants. Test results show that the rate of the degradation should not preclude the use of this product with most commonly used agricultural herbicides under normal use. Most agricultural chemicals compatible with UAN solutions are also compatible with this product. However, compatibility tests prior to use are recommended. Glyphosate herbicides may cause an increase in the rate of degradation when tank-mixed with this product. Therefore such mix should be applied soon after mixing to avoid a possible reduction in the effectiveness of the active ingredient. Product should not be combined with Dicyandiamide (DCD) products.

# N-Edge

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 3	Hazardous to the aquatic environment — Acute Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 4	Flammable liquids, Category 4
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H361	Suspected of damaging fertility or the unborn child
H402	Harmful to aquatic life

### NFPA health hazard

: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

### NFPA fire hazard

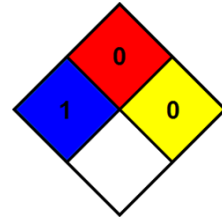
: 0 - Materials that will not burn.

### NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

### NFPA specific hazard

: None



### HMIS III Rating

#### Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

#### Flammability

: 0 Minimal Hazard - Materials that will not burn

#### 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

: B

B - Safety glasses, Gloves

### SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*