FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER:
TRADE NAME: **AWAKEN® 16-0-2**
1.2 RECOMMENDED USE: MULTI-PURPOSE FERTILIZER ADDITIVE FOR USE ON MANY CROPS
1.3 SUPPLIER DETAILS:
LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286
1.4 24 Hour Emergency Phone: 1-800-424-9300 - **Medical Emergencies:** 1-866-944-8565
U.S. Coast Guard National Response Center: 1-800-424-8802

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Eye Irritation	Category 2A	H319
Skin Corrosion / Irritation	Category 2	H315
Acute Toxicity (Inhalation)	Category 4	H332

2.2 Label elements

Signal word: WARNING

Hazard Statement:
H319 – Causes serious eye irritation.
H315 – Causes skin irritation.
H332 – Harmful if inhaled.
H303 – May be harmful if swallowed.

Precautionary Statement: (Prevention):
P260 – Do not breathe dust/fume/gas/mist/vapors / spray.
P264 - Wash thoroughly after handling.
P271 – Use only outdoors or in a well-ventilated area.
P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statement: (Response):
P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P301+P330+P331 – IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.
P303+P361+P353 - IF ON SKIN: Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
P304+P312 – IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P310 – Immediately call a POISON CENTER or doctor / physician.
P340 – Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P363 – Wash contaminated clothing before reuse.
P391 – Collect spillage.

Precautionary Statement: (Storage):
P403+P233 – Store in a well-ventilated place. Keep container tightly closed.
P405 – Store locked up.

2.3 Other hazards

None known

KEEP OUT OF REACH OF CHILDREN –
Appearance and odor: Clear, dark green liquid with slightly sweet, non-offensive odor.

Potential Health effects

Routes of exposure	Eye contact, skin contact, inhalation. Avoid breathing spray mist.
Eyes	Causes serious eye irritation.
Skin	Causes skin irritation.
Inhalation	Harmful if inhaled.
Ingestion	May be harmful if swallowed.
Target organs	Skin. Eyes. Inhalation.
Signs and symptoms	May be harmful if absorbed through skin.
Potential environmental effects	This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effect on the environment.

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Classification	Concentration [%]
Proprietary	Proprietary	Skin Irrit. 2; H315	15.15
Anhydrous Ammonia	7664-41-7	Eye Irrit. 2A; H319	3.00
Urea Ammonium Nitrate	15978-77-5	Inh. 4; H332	42.13
Citric Acid	77-92-9		Trace to 0.6
Manganese Sulfate Monohydrate	7785-87-7		Trace to 0.5
Ferrous Sulfate Heptahydrate	7782-63-0		Trace to 0.7
Copper Sulfate Monohydrate	10257-54-2		Trace to 0.6
Sodium Borate	12280-03-4		Trace to 0.1
Sodium Molybdate	7631-95-0		Trace
Non-hazardous ingredients			
Zinc Oxide	1314-13-2		3.20
Potassium Acetate	127-08-2		6.94
Zinc Sulfate Monohydrate	7733-02-0		Trace to 0.5
Water	7732-18-5		Balance

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Eye contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Inhalation: May cause respiratory irritation.
Eyes: Causes serious eye irritation.
Skin: Causes skin irritation.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565
Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Dry chemical, carbon dioxide (CO_2), alcohol foam, foam, water spray or fog. Do not use water jet as this will spread the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: During a fire, hazardous by-products can be released, including oxides of carbon, oxides of sulfur, ammonia, and oxides of nitrogen.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers, or watercourses.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.
Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Avoid inhalation of mists, vapors / spray and contact with eyes, skin and clothing. Do not breathe mists or vapor. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Store in original containers only. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. LOSS OF AMMONIA WILL CAUSE PRODUCT TO SOLIDIFY. Store in a cool, dry, well-ventilated place, preferably in a locked storage area. Store out of direct sunlight. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
Ammonia	TWA	17 mg/m^3
	STEL/CEIL (C)	24 mg/m^3
Proprietary component	TWA	25 mg/m^3
	STEL/CEIL (C)	37 mg/m^3
Zinc Oxide	TWA	2 mg/m^3 **R** (Measured as respirable fraction of the aerosol.)

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
Ammonia	TWA	35 mg/m^3
Proprietary component	TWA	25 mg/m^3
Zinc Oxide	TWA	5 mg/m^3 (Respirable fraction)

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Coveralls worn over long-sleeved shirt and long pants. Chemical-resistant gloves. Chemical-resistant footwear plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH approved respirator with approved filter. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE : Liquid
ODOR: Slightly sweet, non-offensive.
ODOR THRESHOLD: No data available.
COLOR: Clear, dark green.
pH: 6.4 (neat)
MELTING POINT / FREEZING POINT: No data available
BOILING POINT: 212°F (100°C)
FLASH POINT: Does not flash
FLAMMABILILITY (solid, gas): No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available.
VAPOR PRESSURE: No data available.
SOLUBILITY: Soluble
PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.
AUTO-IGNITION TEMPERATURE: No data available.
DECOMPOSITION TEMPERATURE: No data available
VISCOSITY, dynamic: No data available
SPECIFIC GRAVITY (Water = 1): 1.235 g/ml
BULK DENSITY: 10.29 lbs./gal **/** 1.23 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY
Stable
10.2 CHEMICAL STABILITY
Stable under normal temperature conditions
10.3 POSSIBILITY OF HAZARDOUS REACTIONS
Will not polymerize.
10.4 CONDITIONS TO AVOID
Storage, piping, or handling systems made of brass, copper and galvanized metals may be subject to mild corrosion from prolonged or repeated contact with this product.
10.5 INCOMPATIBILE MATERIALS
Strong oxidizers.
10.6 HAZARDOUS DECOMPOSITION PRODUCTS
May include but are not limited to oxides of carbon, oxides of sulfur, ammonia, and oxides of nitrogen.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE
Eye contact. Skin contact.
LC_{50} (rat): 2,961 – 5,137 mg/m^3 (Ammonia – 1 HR).
LD_{50} Oral (rat): 350 mg/kg (Ammonia); 3,320 mg/kg (Proprietary component)
LD_{50} Dermal (rabbit): 1,060 mg/kg (Proprietary component)
Acute Toxicity Estimates: No data available.
Skin Irritation (rabbit): Causes skin irritation.
Eye Irritation (rabbit): Causes serious eye irritation.
Specific Target Organ Toxicity: Single exposure: No data available.
Aspiration: No data available
Skin Sensitization (guinea pig): Not a sensitizer
Carcinogenicity: No data available
Germ Cell Mutagenicity: No data available
Interactive Effects: None known

12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY
A toxic hazard to fish. Avoid spills or release to watercourses. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. This product is not intended for use in aquatic settings.
Ecotoxicological Data

	Species	Test Results
Proprietary component	Fathead minnow	300.82 mg/L – 96 hour LC_{50}
	Daphnia magna	>300.82 – 48 hour EC_{50}
Ammonia, anhydrous	Hypophthalmichthys nobilis)	0.3 mg/L – 96 hour LC_{50}
Zinc Oxide	Oncorhynchus mykiss	1.1 ppm – 96 hour LC_{50}
	Daphnia magna	98 µ/L – 48 hour EC_{50}

Drift or runoff may adversely affect non-target plants.
Do not apply directly to water.
Do not contaminate water when disposing of equipment wash water.
Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY
Biodegradability: No data available
12.3 BIOACCUMULATIVE POTENTIAL
Bioaccumulation: No data available.
12.4 MOBILITY IN SOIL
No data available.
12.5 OTHER ADVERSE EFFECTS
Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at http://www.acrecycle.org/. Do not contaminate water, food or feed by storage or disposal.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: NOT REGULATED

Freight Classification: FERTILIZING COMPOUNDS (MANUFACTURED FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6; CLASS 70)

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA				HMIS	
1	Health	0	Least	1	Health
0	Flammability	1	Slight	0	Flammability
1	Instability	2	Moderate	1	Reactivity
		3	High	B	PPE
		4	Severe		

SARA Hazard Notification/Reporting
SARA Title III Hazard Category:

Immediate	Y	Fire	N	Sudden Release of Pressure	N
Delayed	N	Reactive	N		

Reportable Quantity (RQ) under U.S. CERCLA: Ammonia (CAS: 7664-41-7) 100 pounds
SARA, Title III, Section 313: Ammonia (CAS: 7664-41-7)
RCRA Waste Code: Not listed
CA Proposition 65: WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

16 OTHER INFORMATION

SDS STATUS: Section 9 revised.

PREPARED BY: Registrations and Regulatory Affairs **REVIEWED BY:** Environmental Health and Safety

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