


**SECTION 1: IDENTIFICATION**

- 1.1 Product identifier:** ENCOURAGE® NANOCAL® 4-0-1
- Other means of identification:** Not applicable.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
- Relevant identified uses:** Fertilizer.
- Uses advised against:** None known.
- 1.3 Name, U.S. address, and U.S. telephone number of the manufacturer, importer, or other responsible party:**  
Oro Agri, Inc.  
2788 S. Maple Ave.  
Fresno, CA 93725  
Telephone Number: +1(559) 442-4996  
Email: sds-na@rovensanext.com
- 1.4 Emergency phone number:**  
Incident, Spill, Leak, Fire, Exposure or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: +1(800) 424-9300  
Outside USA: +1(703) 741-5970.

**SECTION 2: HAZARD(S) IDENTIFICATION**

- 2.1 Classification of the substance or mixture:**
- 29 CFR 1910.1200:**  
Classification of this product has been carried out in accordance with 1910.1200 App D.
- Flammable liquids, Category 4  
Acute toxicity (inhalation), Category 4
- 2.2 Label elements:**
- 29 CFR 1910.1200:**  
Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200.
- Signal word: Warning**
- 
- Hazard statements:**  
Combustible liquid. Harmful if inhaled.
- Precautionary statements - Prevention:**  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing. Wear eye protection or face protection. Avoid breathing mist/ vapors/spray. Use only outdoors or in a well-ventilated area.
- Precautionary statements - Response:**  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. In case of fire: Use sand, carbon dioxide or powder to extinguish.
- Precautionary statements - Storage:**  
Store in a well-ventilated place.
- Precautionary statements - Disposal:**  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- 2.3 Hazards not otherwise classified (HNOC):**  
None known.

## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances:**  
Non-applicable.

**3.2 Mixtures:**

**Mixture description:**

Identification	Chemical name	Concentration
	<b>Proprietary mixture<sup>1</sup></b>	<b>55 - 75 %</b>
CAS: 57-13-6	<b>Urea</b>	<b>5 - &lt;10 %</b>
CAS: 471-34-1	<b>Calcium Carbonate</b>	<b>20 - 30 %</b>
CAS: 68439-46-3	<b>Secondary Alcohol Ethoxylate</b>	<b>1 - 5 %</b>

**Composition comments:**

<sup>1</sup>Components, CAS numbers and/or concentrations not listed are either non-hazardous, below reporting limits or have been withheld as trade secrets.

## SECTION 4: FIRST-AID MEASURES

**4.1 Description of necessary measures:**

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

**By inhalation:**

If breathing is irregular or stopped, immediately seek medical assistance, and start first aid actions. Move to fresh air. Call a physician if symptoms develop or persist.

**By skin contact:**

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

**By eye contact:**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**By ingestion/aspiration:**

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

**4.2 Most important symptoms/effects, acute and delayed:**

Harmful if inhaled. Exposed individuals may experience discomfort.

**4.3 Indication of immediate medical attention and special treatment needed, if necessary:**

In case of burns and frostbite: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Symptoms may develop several hours following exposure, medical observation therefore necessary for at least 48 hours.

## SECTION 5: FIRE-FIGHTING MEASURES

**5.1 Suitable (and unsuitable) extinguishing media:**

**Suitable extinguishing media:**

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media:**

Do not use water jet as an extinguisher, as this will spread the fire.

**5.2 Specific hazards arising from the chemical:**

In case of insufficient ventilation and/or in use, may form flammable/explosive vapor air mixture. Solvent vapors are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapors may form explosive mixtures with air.

**5.3 Special protective equipment and precautions for fire-fighters:**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Firefighting equipment/instructions:**

In case of fire and/or explosion, do not breathe fumes. Move containers from fire area if you can do so without risk. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance.

**Specific methods:**

Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards:**

Combustible liquid. Material will burn in a fire.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures:****For non-emergency personnel:**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**For emergency responders:**

Wear protective equipment. Keep unprotected persons away.

**6.2 Environmental precautions:**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. If substance has entered a water course or sewer, inform the responsible authority.

**6.3 Methods and materials for containment and cleaning up:**

Large Spills: Stop the flow of material if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand, or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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. For waste disposal, see section 13 of the SDS.

**6.4 Reference to other sections:**

See section 13.

**SECTION 7: HANDLING AND STORAGE****7.1 Precautions for safe handling:**

Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Do not get in eyes, on skin, or on clothing. Explosion-proof general and local exhaust ventilation. Take action to prevent static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapor/spray. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**7.2 Conditions for safe storage, including any incompatibilities:**

Keep away from heat, sparks, and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters:**

Substances whose occupational exposure limits have to be assessed in the workplace.

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

Identification	Occupational exposure limits	
Proprietary component 1	PEL-TWA	15 mg/m <sup>3</sup> (total dust), 5 mg/m <sup>3</sup> (respirable fraction)
Proprietary component 2	PEL-TWA	2 mg/m <sup>3</sup>

US. ACGIH Threshold Limit Values (2022):

Identification	Occupational exposure limits	
Proprietary component 3	TLV-TWA	2 mg/m <sup>3</sup> (inhalable fraction and vapor) [2001]
Proprietary component 2	TLV- Ceiling	2 mg/m <sup>3</sup> [1992]

CALIFORNIA- TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS:

Identification	Occupational exposure limits	
Proprietary component 1	PEL-TWA	10 mg/m <sup>3</sup> (total dust), 5 mg/m <sup>3</sup> (respirable fraction)
Proprietary component 3	PEL-TWA	10 mg/m <sup>3</sup>
Proprietary component 2	PEL- Ceiling	2 mg/m <sup>3</sup>
Proprietary component 2	IDLH	10 mg/m <sup>3</sup>

NIOSH: Immediately Dangerous To Life or Health (IDLH) Values:

Identification	Occupational exposure limits	
Proprietary component 1	REL-TWA	10 mg/m <sup>3</sup> (total dust), 5 mg/m <sup>3</sup> (respirable fraction)
Proprietary component 3	REL-TWA	10 mg/m <sup>3</sup>
Proprietary component 2	REL-Ceiling	2 mg/m <sup>3</sup>

**Notation:**

1. TWA (Time Weighted Average): The average exposure to a hazardous substance over a standard 8-hour workday or 40-hour workweek.
2. PEL (Permissible Exposure Limit): A regulatory limit set by OSHA on the concentration of a substance in the air.
3. STEL (Short-Term Exposure Limit): The allowable average exposure over a short period, typically 15 minutes.
4. TLV (Threshold Limit Value): A guideline established by the American Conference of Governmental Industrial Hygienists (ACGIH).
5. IDLH (Immediately Dangerous to Life or Health): An exposure to airborne contaminants likely to cause death, immediate or delayed permanent adverse health effects, or prevent escape from the environment.
6. Ceiling value is a limit value above which exposure should not occur.

## 8.2 Biological limit values:

No biological exposure limits noted for the ingredient(s).

## 8.3 Appropriate engineering controls:

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

## 8.4 Individual protection measures, such as personal protective equipment:

### Eye/face protection:

Wear safety glasses with side shields (or goggles) and a face shield. Wear face shield if there is risk of splashing.

### Skin protection:

#### Hand protection:

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

#### Other:

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

### Respiratory protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

### Thermal hazards:

Wear appropriate thermal protective clothing when necessary.

### Environmental exposure controls:

Use appropriate container to avoid environmental contamination. Keep away from drains, surface, and ground water.

### General hygiene considerations:

Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

#### Appearance:

Physical state: Liquid

Color: Brown

Odor:	Burnt like
Odor threshold:	Data not available
<b>Volatility:</b>	
Boiling point at atmospheric pressure:	Data not available
Vapor pressure:	Data not available
Evaporation rate:	Data not available
<b>Product description:</b>	
Density:	1.30 – 1.40 g/mL
Relative density:	Data not available
Dynamic viscosity:	>500 cP
Kinematic viscosity:	Data not available
pH:	8.0 – 9.5
Vapor density:	Data not available
Partition coefficient n-octanol/water:	Data not available
Solubility in water:	Complete
Solubility properties:	Data not available
Decomposition temperature:	Data not available
Melting point/freezing point:	Data not available
<b>Flammability:</b>	
Flash Point:	75 °C (167 °F) - Pensky-Martens Closed Cup
Flammability (solid, gas):	Data not available
Autoignition temperature:	Data not available
Lower flammability limit:	Data not available
Upper flammability limit:	Data not available
<b>Particle characteristics:</b>	
Median equivalent diameter:	Data not available
<b>9.2 Other information:</b>	
<b>Information with regard to physical hazard classes:</b>	
Explosive properties:	Data not available
Oxidizing properties:	Data not available
Corrosive to metals:	Data not available
Heat of combustion:	Data not available
Aerosols-total percentage (by mass) of flammable components:	Data not available
<b>Other safety characteristics:</b>	
Surface tension:	Data not available
Refraction index:	Data not available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity:

The product is stable and non-reactive under normal conditions of use, storage and transport.

#### If heated:

Risk of ignition.

### 10.2 Chemical stability:

Material is stable under normal conditions.

### 10.3 Possibility of hazardous reactions:

No dangerous reaction known under conditions of normal use.

### 10.4 Conditions to avoid:

Avoid heat, sparks, open flames, and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

#### Hints to prevent fire or explosion:

Use explosion-proof electrical/ventilating/lightning/equipment. Use only non-sparking tools. Take action to prevent static discharges.

**10.5 Incompatible materials:**

Strong oxidizing agents.

**10.6 Hazardous decomposition products:**

Thermal decomposition of this product can generate carbon monoxide, carbon dioxide, sulfur oxides, and sodium oxides.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects:****Information on likely routes of exposure:**

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

**Ingestion (acute effect):**

Expected to be a low ingestion hazard.

**Inhalation (acute effect):**

Harmful if inhaled.

**Contact with the skin (acute effect):**

Expected to be a low dermal hazard.

**Contact with the eyes (acute effect):**

No adverse effect due to eye contact expected.

**11.2 Symptoms related to the physical, chemical, and toxicological characteristics:**

Harmful if inhaled. Exposed individuals may experience discomfort.

**Information on toxicological effects:****Acute toxicity:**

Harmful if inhaled.

**Product-specific toxicological information: ENCOURAGE NANOCAL 4-0-1 (CAS Mixture)**

Exposure route	Endpoint	Value	Species	Method
<i>Acute toxicity</i>				
Oral	LD50	5000 mg/kg	Rat	OECD 423
Dermal	LD50	>2000 mg/kg	Rat	OECD 402
Inhalation vapor	LC50	>1.877 mg/L (4 h)	Rat	OECD 403

**Skin corrosion/irritation:**

Prolonged skin contact may cause temporary irritation.

**Skin contact ENCOURAGE NANOCAL 4-0-1**

OECD 404

Result: Non-Irritating

Species: Rabbit.

**Eye damage/irritation:**

Non-Irritating.

**Eye contact ENCOURAGE NANOCAL 4-0-1**

OECD 405

Result: Non-Irritating

Species: Rabbit.

**Skin sensitization:**

Not a skin sensitizer.

**Sensitization ENCOURAGE NANOCAL 4-0-1**

OECD 406

Result: Non-sensitizing

Species: Guinea pig.

**Respiratory sensitization:**

Not a respiratory sensitizer.

**Germ cell mutagenicity:**

No data available to indicate product or any components present greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity:**

This product is not considered to be a carcinogen by IARC, NTP, or OSHA.

- **International Agency for Research on Cancer (IARC) Monographs on the Evaluation of Carcinogenic Risks to Humans**  
Proprietary component 3: Class 3 – Not carcinogenic to human.
- **National Toxicology Program (NTP) Report on Carcinogens**  
Not listed.
- **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**  
Not listed.

**Reproductive toxicity:**  
Not classified.

**Specific target organ toxicity (STOT):**

-**Specific target organ toxicity - single exposure**  
Not classified.

-**Specific target organ toxicity - repeated exposure**  
Not classified.

**Aspiration hazard:**  
Not an aspiration hazard.

**Chronic effects:**  
Prolonged inhalation may be harmful.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity:

The experimental information related to the eco-toxicological properties of the product is not classified for environmental hazards under 29 CFR 1910.1200. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### 12.2 Persistence and degradability:

No data is available on the degradability of this product.

### 12.3 Bioaccumulative potential:

Data not available.

### 12.4 Mobility in soil:

Data not available.

### 12.5 Results of PBT and vPvB assessment:

Data not available.

### 12.6 Endocrine disrupting properties:

Data not available.

### 12.7 Other adverse effects:

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Disposal methods:

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways, or ditches with chemical or used container. Dispose of contents/ container in accordance with local/regional/national/international regulations.

**Local disposal regulations:**

Dispose in accordance with all applicable regulations.

**Hazardous waste code:**

The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.

**Waste from residues/unused products:**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see Disposal instructions).

**Contaminated packaging:**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## SECTION 14: TRANSPORT INFORMATION

### Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:



- |  |  |
|--|--|
| <b>14.1 UN number:</b>   | NA1993   |
| <b>14.2 UN proper shipping name:</b>   | Combustible liquid, n.o.s. (Orange sweet ext.) |
| <b>14.3 Transport hazard class(es):</b>  | 3  |
| Labels:  | 3  |
| <b>14.4 Packing group, if applicable:</b>  | III  |
| <b>14.5 Marine pollutant:</b>  | No   |
| <b>14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises</b> |  |
| Physico-Chemical properties:   | see section 9                                  |
| Limited quantities:  | 5 L  |
| 49 CFR 173.150: It can be shipped as a non-hazardous material if the container is under 120 gallons.   |  |
| <b>14.7 Transport in bulk (according to IMO instruments):</b>  | Non-applicable                                 |

### Transport of dangerous goods by sea:

With regard to IMDG 41-22:

- |  |                |
|--|----------------|
| <b>14.1 UN number:</b>   | Non-applicable |
| <b>14.2 UN proper shipping name:</b>   | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>  | Non-applicable |
| Labels:  | Non-applicable |
| <b>14.4 Packing group, if applicable:</b>  | Non-applicable |
| <b>14.5 Marine pollutant:</b>  | No             |
| <b>14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises</b> |                |
| Special regulations:   | Non-applicable |
| EmS Codes:   | Non-applicable |
| Physico-Chemical properties:   | see section 9  |
| Limited quantities:  | Non-applicable |
| Segregation group:   | Non-applicable |
| <b>14.7 Transport in bulk (according to IMO instruments):</b>  | Non-applicable |

### Transport of dangerous goods by air:

With regard to IATA/ICAO 2024:

- |  |                |
|--|----------------|
| <b>14.1 UN number:</b>   | Non-applicable |
| <b>14.2 UN proper shipping name:</b>   | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>  | Non-applicable |
| Labels:  | Non-applicable |
| <b>14.4 Packing group, if applicable:</b>  | Non-applicable |
| <b>14.5 Marine pollutant:</b>  | No             |
| <b>14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises</b> |                |
| Physico-Chemical properties:   | see section 9  |
| <b>14.7 Transport in bulk (according to IMO instruments):</b>  | Non-applicable |

### Additional information:

Test results from Sustained Combustion testing (L.2 of Part 3 section 32 of UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria) indicate that this material does not sustain combustion. At the discretion of the shipper, this material does not need to be considered a Dangerous Good when offered for transport by ground in the U.S. according to 49 CFR 173.120(b)(3), by air according to IATA DGR section 3.3.1.3(a), or by sea according to IMDG Code chapter 2.3.1.3.1.



## SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations specific for the product in question:

#### Specific provisions in terms of protecting people or the environment:

It is recommended to use the information provided in this safety data sheet as a foundation for conducting workplace-specific risk assessments. These assessments will help establish the appropriate risk prevention measures for handling, using, storing, and disposing of this product. Take into consideration other applicable federal, state, and local laws and local regulations.

#### California Proposition 65:

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## SECTION 16: OTHER INFORMATION

**Revision Date:** 5/8/2025

**Version Number:** 1

#### Key literature references and sources for data:

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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