

# Safety Data Sheet

WEGO CHEMICAL & MINERAL CORP

239 Great Neck Road

Great Neck, NY 11021

Phone: (516) 487 3510; email: sales@wegochem.com

Date of Revision: 1/26/2015

THIOUREA DIOXIDE

## Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** DEGAFAS<sup>®</sup>, DEGAFAS AS<sup>®</sup>, REDUCING AGENT F<sup>™</sup>, DEPILOR<sup>™</sup>, (THIOUREA DIOXIDE)

**Chemical Formula:** CH<sub>4</sub>N<sub>2</sub>O<sub>2</sub>S

**CAS Number:** 1758-73-2

**Other Designations:** FAS, Formamidinesulfinic acid, Aminoiminomethane Sulfinic acid

**General Use:** This material is a reducing agent used primarily in the production of bleached recycled pulp. In addition, it is also effective in the bleaching of stone ground-wood, pressurized ground-wood.

**Emergency Telephone: (ChemTel) Contract MIS0000335; 800 255-3924; INTL 813 248-0585**

## Section 2 - Hazards Identification

### ☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Highly susceptible to decomposition generating sulfur dioxide, ammonia, sulfinic acid and carbon dioxide if exposed to humidity and heat above 50 °C. May irritate digestive tract, upper respiratory tract, eyes and skin.

#### HMIS

H	2
F	0
R	2

#### PPE<sup>†</sup>

<sup>†</sup>Sec. 8

### Potential Health Effects

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Self-heating substances and mixtures (Category 1), H251

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

Acute aquatic toxicity (Category 3), H402

Chronic aquatic toxicity (Category 3), H412

#### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

#### Hazard statement(s)

H251 Self-heating: may catch fire.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

#### Precautionary statement(s)

P235 + P410 Keep cool. Protect from sunlight.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

## Thiourea Dioxide

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P312 Call a POISON CENTER or doctor/ physician if you feel unwell.  
 P321 Specific treatment (see supplemental first aid instructions on this label).  
 P330 Rinse mouth.  
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P362 Take off contaminated clothing and wash before reuse.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P407 Maintain air gap between stacks/ pallets.  
 P410 Protect from sunlight.  
 P413 Store bulk masses greater than .? kg/ .? lbs at temperatures not exceeding .? °C/ .? °F.  
 P420 Store away from other materials.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS - none**

**Primary Entry Routes:** Ingestion, Inhalation

**Target Organs:** Skin, eyes, upper respiratory tract

**Acute Effects**

**Inhalation:** May cause irritation to the upper respiratory tract. Symptoms may include coughing, sore throat and shortness of breath.

**Eye:** May cause irritation, redness and pain.

**Skin:** skin irritant when moisture is present.

**Ingestion:** May cause irritation to the digestive tract. Symptoms may include nausea, vomiting, abdominal pain, diarrhea, dizziness and headache.

**Carcinogenicity:** IARC, NTP, and OSHA do not list Thiourea Dioxide as a carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:** Chronic exposure may aggravate pre-existing conditions to include diseases of the skin, eyes and respiratory tract.

**Chronic Effects:**

### Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	EINECS/ELINCS	% wt or % vol
THIOUREA DIOXIDE	1758-73-2	217-157-8	>99

**Trace Impurities:** Thiourea CAS #62-56-6 (< 0.1%)

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Thiourea Dioxide	10 mg/m <sup>3</sup>	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

### Section 4 - First Aid Measures

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult medical doctor.

**Eye Contact:** Immediately flush with large amounts of water for at least 15 minutes while holding eyelids apart. In all cases of eye contamination it is a sensible precaution to seek medical advice.

**Skin Contact:** Wash contaminated skin with plenty of soap and water. If irritation occurs, seek medical advice.

**Ingestion:** If swallowed, seek medical attention immediately.

*After first aid, get appropriate in-plant, paramedic, or community medical support.*

**Note to Physicians:** Treat symptomatically based on judgment of doctor and individual reactions of patient.

**Special Precautions/Procedures:**

### Section 5 - Fire-Fighting Measures

**Flash Point:** N/A

**Flash Point Method:**

**Burning Rate:**

**Autoignition Temperature:** N/A

**LEL:** N/A



## Thiourea Dioxide

UEL: N/A

**Extinguishing Media:** Excessive quantity of water, dry chemical or carbon dioxide. Use equipment/media appropriate to surrounding fire conditions.

**Unusual Fire or Explosion Hazards:** Material may decompose after long exposure to high moisture level. May decompose when heated above 50 °C or involved in a fire.

**Hazardous Combustion Products:** Emits toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and sulfur oxides when heated to decomposition.

**Fire-Fighting Instructions:** Do not release runoff from fire control methods to sewers or waterways.

**Fire-Fighting Equipment:** Wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

\* As of 3/20/2000, Thiourea dioxide not rated by NFPA, values are estimated.

### Section 6 - Accidental Release Measures

**Spill /Leak Procedures:**

**Spills:** Contain spill. Sweep up but avoid generating dust. Collect and seal in properly labeled containers for disposal.

**Large Spills**

**Containment:** For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Cleanup:**

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

### Section 7 - Handling and Storage

**Handling Precautions:** Wear overalls, safety glasses and impervious gloves. If dust exist, wear dust mask meeting the requirements of AS1715 and AS1716.

**Storage Requirements:** Store in a cool (below 35 °C), dry area out of direct sunlight. Protect from atmospheric moisture. Store away from oxidizing agents. Do not add to hot materials; do not grind or subject to frictional heat as decomposition may result.

### Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:**

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Administrative Controls:**

**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

*Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

### Section 9 - Physical and Chemical Properties

**Physical State:** granular solid

**Appearance and Odor:** white, turns yellowish with time

**Odor Threshold:** Odorless

**Vapor Pressure:** negligible

**Vapor Density (Air=1):** 3.8

**Formula Weight:** 108.12

**Density:**

**Specific Gravity (H<sub>2</sub>O=1, at 4 °C):** 1.71

**pH:** 4 (1% solution)

**Water Solubility:** 30 g/l (25 °C)

**Other Solubilities:**

**Boiling Point:** > 100 °C (212 °F)

**Freezing/Melting Point:** 126 °C (259 °F)

**Decomposition Temperature:** > 123 °C

**Viscosity:**

**Refractive Index:**

**Surface Tension:**

**% Volatile:**

## Thiourea Dioxide

### Section 10 - Stability and Reactivity

**Stability:** Thiourea Dioxide may decompose on lengthy exposure to high temperature and humidity. Avoid heat, humidity and exposure to incompatibles.

**Polymerization:** Hazardous polymerization cannot occur.

**Chemical Incompatibilities:** Strong oxidizing agents (alkalis, chlorates, nitrates, permanganates, etc.)

**Conditions to Avoid:** Product reacts with water. Take precautions to avoid contact with atmospheric moisture and incompatibilities.

**Hazardous Decomposition Products:** Thermal oxidative decomposition of Thiourea Dioxide can produce toxic fumes of carbon monoxide, carbon dioxide, hydrogen cyanide, nitrogen oxides and sulfur oxides.

### Section 11- Toxicological Information

#### Toxicity Data:\*

#### Acute Oral Effects:

Rat, oral, LD<sub>50</sub>-LC<sub>50</sub> Mixture: 1120 mg/kg

**Epidemiology:** No information found

**Teratogenicity:** No information found

**Reproductive Effects:** No information found

**Mutagenicity:** No information found

**Neurotoxicity:** No information found

\* See NIOSH, *RTECS(PB0372500)*, for additional toxicity data.

### Section 12 - Ecological Information

#### Ecotoxicity:

Toxicity to daphnia and other aquatic invertebrates: EC<sub>50</sub> - Daphnia magna (Water flea) - 390 mg/l - 24 h

Toxicity to algae EC<sub>50</sub> - Desmodesmus subspicatus (green algae) - 32 mg/l - 72 h

**Environmental Fate:** no data available

**Environmental Degradation:** no data available

**Soil Absorption/Mobility:** no data available

### Section 13 - Disposal Considerations

**Disposal:** Dispose of in accordance with all Local, State and Federal regulations at an approved waste disposal facility.

**Disposal Regulatory Requirements:**

**Container Cleaning and Disposal:**

### Section 14 - Transport Information

#### Regulated for transportation

#### US DOT(49 CFR 172.101):

PSN: Thiourea Dioxide

Hazard Class: 4.2

UN Number: UN3341

Packing Group: III

#### IATA

PSN: Thiourea Dioxide

Hazard Class: 4.2

UN Number: UN3341

Packing Group: III

#### IDG

PSN: Thiourea Dioxide

Hazard Class: 4.2

UN Number: UN3341

Packing Group: III

#### IMDG/IMO

PSN: Thiourea Dioxide

Hazard Class: 4.2

UN Number: UN3341

Packing Group: III

### Section 15 - Regulatory Information

#### US FEDERAL

##### TSCA

CAS# 1758-73-2 is listed on the TSCA inventory.

##### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

##### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

##### Section 12b

None of the chemicals are listed under TSCA Section 12b.

## Thiourea Dioxide

### **TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

### **CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

### **SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

### **SARA Codes**

**SARA 311/312** Hazards Reactivity Hazard, Acute Health Hazard

**Section 313** No chemicals are reportable under Section 313.

### **Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

### **Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

### **OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

### **STATE**

CAS# 1758-73-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

### **California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

### **European/International Regulations**

#### **European Labeling in Accordance with EC Directives**

#### **Hazard Symbols:**

XN

#### **Risk Phrases:**

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

#### **Safety Phrases:**

S 24/25 Avoid contact with skin and eyes.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 28A After contact with skin, wash immediately with plenty of water

#### **WGK (Water Danger/Protection)**

CAS# 1758-73-2: 1

#### **Canada - DSL/NDSL**

CAS# 1758-73-2 is listed on Canada's DSL List.

#### **Canada - WHMIS**

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contain all of the information required by those regulations.

## Section 16 - Other Information

**Disclaimer:** All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable: However, it is the users responsibility to determine the safety, toxicity and suitability for its own use of this product. WEGO CHEMICAL & MINERAL CORP. DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE USE BY OTHERS OF THIS PRODUCT.