

GRAVEX™

20 EW

SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)

1. IDENTIFICATION

PRODUCT NAME: Gravex 20 EW
DESCRIPTION: A liquid fungicide
EPA REG. NO.: 91234-283
COMPANY IDENTIFICATION: Atticus, LLC
940 NW Cary Parkway, Suite 200
Cary, NC 27513

2. HAZARD IDENTIFICATION

DANGER

May be fatal if swallowed and enters airways (H304)
Suspected of causing cancer (H351)
Suspected of damaging fertility or the unborn child (H361)
May cause damage to organs through prolonged or repeated exposure (H373)
Causes eye irritation (H320)
Very toxic aquatic life with long lasting effects (H400+H410)



HAZARD CLASSIFICATION

Health Hazards	Category	Physical Hazards	Category
Aspiration hazard	1	None	-
Serious eye damage/irritation	2B		
Carcinogenicity	2	Environmental Hazards	Category
Reproductive toxicity	2	Hazardous to the aquatic environment, acute	1
Specific target organ toxicity, repeated exposure	2	Hazardous to the aquatic environment, chronic	1

HAZARDS NOT REQUIRING CLASSIFICATION

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

PRECAUTIONARY STATEMENTS

Obtain, read and follow all safety instructions before use. (P203)

Do not breathe mist/vapors/spray. Wash hands and exposed skin thoroughly after handling. Do not touch eyes. Wear eye protection/face protection/protective clothing/protective gloves. (P260+P264+P265+P280)

IF SWALLOWED: Get emergency medical help immediately. Do NOT induce vomiting. (P301+P316+P331)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **If eye irritation persists:** Get medical help. (P305+P351+P338+P337+P317)

IF exposed or concerned, get medical advice. Get medical help if you feel unwell. (P318+P319)

Avoid release to the environment not in accordance with the product label. Collect spillage. (P273+P391)

Store locked up. (P405)

Dispose of contents / container in accordance with local regulations. Refer to the product label for specific disposal instructions. (P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Myclobutanil	1H-1,2,4-Triazole-1-propanenitrile, .alpha.-butyl-.alpha.-(4-chlorophenyl)-	88671-89-0	19.7%
Heavy aromatic naphtha		64742-94-5	≤25.0%
Cyclohexanone		108-94-1	≤10.0%
Propylene glycol		57-55-6	≤6.0%
Solvent naphtha (petroleum), light aromatic		64742-95-6	≤1.0%
Naphthalene		91-20-3	≤0.2%

NOTE: Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact SafetyCall at 1-844-685-9173 for emergency medical treatment. information. For Chemical Emergency: Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300.

IF IN EYES: 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.

IF SWALLOWED: Immediately call a doctor or poison control center. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: This product may pose an aspiration pneumonia hazard. Contain petroleum distillates.

5. FIREFIGHTING MEASURES

Flash Point: Not available

Flammability Limits: Not determined

Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Extinguishing Medium: Water fog or fine spray, dry chemical fire extinguishers, carbon dioxide fire extinguishers, foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function but will be less effective. Water fog applied gently may be used as a blanket for fire extinguishment.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and full bunker gear.

Fire Fighting Instructions: Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Sulfur oxides, phosphorus oxides, nitrogen oxides, hydrogen chloride, carbon monoxide, carbon dioxide.

NFPA Ratings: Health – 1 / Flammability – 1 / Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined area. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Spill Cleanup: Dike spill using suitable absorbent or impervious materials such as sand or clay. Collect and contain contaminated absorbent and place in an appropriate container for disposal. Pump any free liquid into an appropriate closed container and decontaminate tools and equipment following cleanup. Collect washings for disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin, eyes or clothing. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Storage: Store in a tightly closed container in a cool, dry place. Store in original container and out of reach of children, preferably in a locked storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Myclobutanil	DOW IHG	TWA	0.5 mg/m ³
Cyclohexanone	ACGIH	TWA	20 ppm
	ACGIH	STEL	50 ppm
	OSHA Z-1	TWA	200 mg/m ³ 50 ppm
	ACGIH	TWA	OEL Notation
	ACGIH	STEL	Absorbed via skin
Propylene glycol	US WEEL	TWA	10 mg/m ³
Solvent naphtha (petroleum), light aromatic	OSHA Z-1	TWA	2,000 mg/m ³ 500 ppm
	ACGIH	TWA	200 mg/m ³ , as total hydrocarbon vapor
Naphthalene	DOW IHG	TWA	10 ppm
	DOW IHG	TWA	Absorbed via skin
	DOW IHG	STEL	15 ppm
	DOW IHG	STEL	Absorbed via skin
	ACGIH	TWA	10 ppm
	ACGIH	TWA	Absorbed via skin
	OSHA Z-1	TWA	50 mg/m ³ 10 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower. Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Protective Clothing: Applicators and other handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves made from barrier laminate, shoes plus socks, applicators applying this product by airblast application must apply using an enclosed cab or must wear chemical-resistant headgear, if overhead exposure is expected, when mixing/loading/applying liquid myclobutanil formulations to turf with backpack sprayers handlers must wear double layer clothing and gloves.

General: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	opaque white liquid
Odor:	strongly bitter
Melting/freezing point:	not available
Boiling point/Boiling range:	not available
Flammability:	>230°F; >110°C
Flammability limits (upper/lower):	not available
Flash point (cc):	not available
Auto-ignition temperature:	not available
Decomposition temperature:	not available
pH:	4.3-5.3
Viscosity:	180-5200cP @ 24°C 134-3040 cP @ 40°C
Solubility:	not available
Partition coefficient:	not available
Vapor pressure:	not available
Density:	8.6 lb./gal
Relative vapor density:	not available
Particle characteristics:	not available

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

CHEMICAL STABILITY: Stable at normal use and storage conditions.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: carbon monoxide, carbon dioxide, hydrogen chloride, hydrogen cyanide, and nitrogen oxides. Toxic gases are released during decomposition.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Information presented below is from testing done on an identical or substantially similar product:

ORAL TOXICITY (rat LD₅₀): 3,749 mg/kg (female)

DERMAL TOXICITY (rat LD₅₀): >2,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): 5 mg/L (4-hour) (estimated)

EYE IRRITATION: May cause moderate eye damage.

SKIN IRRITATION: Brief contact may cause slight skin irritation with local redness.

SKIN SENSITIZATION: Did not cause allergic skin reactions when tested in guinea pigs.

CARCINOGENICITY:

EPA: Group E: Not likely to be carcinogenic to humans. (myclobutanil)
Likely to be carcinogenic in humans (naphthalene)

ACGIH: A3 (cyclohexanone and naphthalene)

IARC: 2B (naphthalene)

NTP: Reasonable anticipated (naphthalene)

OSHA: Listed (naphthalene)

STOT – SINGLE EXPOSURE TOXICITY: Available data are inadequate to determine single exposure target organ toxicity.

STOT – REPEATED EXPOSURE TOXICITY: In animals, effects have been reported on the following organs: liver, testes, adrenal gland, kidney, thyroid. Contains components which have been reported to cause effects on the following organs in animals: kidney, liver, central nervous system, blood. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

REPRODUCTIVE TOXICITY: For the active ingredient; in laboratory animals' studies, effects on reproduction have been only seen at doses that produced significant toxicity to the parent animals. For the minor components: cyclohexanone causes reduced growth and survival of offspring in an animal reproduction study. Dose levels producing this effect also caused central nervous system effects in parental animals.

TERATOGENICITY: For the active ingredients, has been toxic to the fetus in lab animals at doses nontoxic to the mother. Did not cause birth defects in laboratory animals. For the minor components has been toxic to the fetus in laboratory animals at doses toxic to the mother. Has caused birth defects in lab animals only at doses producing severe toxicity in the mother.

12. ECOLOGICAL INFORMATION

Myclobutanil is slightly toxic to freshwater daphnid and highly toxic to estuarine/marine invertebrates.

The following information is for the active ingredient, myclobutanil:

AQUATIC TOXICITY

Bluegill Sunfish (96-hour LC₅₀): 2.4 mg/L

Fathead Minnow (NOAEC): 0.98 mg/L

Sheepshead Minnow (96-hour LC₅₀): 4.7 mg/L

Water Flea (48-hour EC₅₀): 11 mg/L; (NOAEC) 3.9 mg/L (based on ACR analysis)

Mysid Shrimp (96-hour LC₅₀): 0.24 mg/L; (NOAEC): 0.0856 mg/L

Algae (120-hour EC₅₀): 0.83 mg/L

AVIAN TOXICITY

Bobwhite Quail (LD₅₀): 498 mg/kg; (NOAEC): 256 mg/kg

TERRESTRIAL INVERTEBRATE TOXICITY

Honeybee (48-hour LD₅₀): >500 µg/bee

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide spray mixture or rinsate that cannot be used should be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Non-refillable containers. See container labeling for complete disposal instructions.

14. TRANSPORT INFORMATION

US-DOT:

Not regulated

IMDG:

Containers ≤ 1.3 gal. (5 L) in strong out packaging:

Not regulated

Containers > 1.3 gal. (5 L) or containers not in strong outer packaging:

Shipped internationally by vessel: UN3082, Environmentally hazardous substance, liquid, N.O.S. (contains myclobutanil), 9, PG III, Marine Pollutant

IATA:

Containers ≤ 1.3 gal. (5 L) in strong out packaging:

Not regulated

Containers > 1.3 gal. (5 L) or containers not in strong outer packaging:

Shipments by air: UN3082, Environmentally hazardous substance, liquid, N.O.S. (contains myclobutanil), 9, PG III, Marine Pollutant

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

FIFRA –

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the pesticide label:

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. DO NOT contaminate water when disposing of equipment washwaters. DO NOT apply when weather conditions favor drift or runoff from areas treated.

GROUNDWATER ADVISORY

Myclobutanil is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soil is permeable, particularly where the water table is shallow.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous Chemical reaction may occur.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate (Acute), Delayed (Chronic)

SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients

Myclobutanil (CAS No. 8867-89-0): 19.7%

Naphthalene (CAS No. 91-20-3): 0.2%

CERCLA Reportable Quantity (RQ) –

Cyclohexanone (CAS No. 108-94-1): 5,000 lbs.

Naphthalene (CAS No. 91-20-3): 100 lbs.

CALIFORNIA PROP 65 STATUS –

⚠ WARNING: This product can expose you to chemicals including myclobutanil, which is known to the State of California to cause developmental toxicity and naphthalene, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

16. OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

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SDS Version: 2.0_US

Effective Date: 10/28/2022