

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier : **Killem Biocide**

Product Code(s) : 00119, 90119, 00191P, 00120

Product Use : Fuel oil biocide and slimicide

Chemical Family : Mixture.

Supplier's name and address:
FPPF Chemical Company, Inc.
 117 West Tupper Street
 Buffalo, NY, USA
 14201

Manufacturer's name and address:
 Refer to Supplier

Information Telephone # : 1-800-735-3773

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

SECTION 2 - HAZARDS IDENTIFICATION

Classification : OSHA: Hazardous classification: Acute Health Hazard; Chronic Health Hazard.

WHMIS classification: Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material); Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Emergency Overview : Clear, yellow-green liquid. Sulphur odour.
 Caution! May cause eye, skin and respiratory tract irritation. May cause gastrointestinal discomfort. May cause sensitization by skin contact. Contains material which may be a teratogen. Contains material that may cause adverse reproductive effects. Contains material which may cause cancer.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : May cause irritation to the nose, throat and upper respiratory tract. High concentrations may cause nausea, headache, dizziness and incoordination.

Skin : May cause moderate to severe skin irritation.

Eyes : May cause moderate to severe irritation.

Ingestion : Ingestion may irritate digestive tract and cause nausea, vomiting and diarrhea.

Effects of long-term (chronic) exposure

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Carcinogenic status : Possible cancer hazard. See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Potential teratogen. Potential reproductive toxicant. Possible sensitizer. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects : See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
Disodium ethylene bisdithiocarbamate	142-59-6	10.00 - 30.00
Sodium dimethyldithiocarbamate	128-04-1	10.00 - 30.00
Ethylene thiourea	96-45-7	0.10 - 1.00

SECTION 4 - FIRST AID MEASURES

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.

- Skin contact** : Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention. Wash contaminated clothing before re-use.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation or symptoms develop, seek medical attention.
- Ingestion** : Seek immediate medical attention/advice. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

- : Not flammable under normal conditions of handling. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.1200)

- : Non-flammable.

Oxidizing properties

- : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- : Not expected to be sensitive to mechanical impact or static discharge.

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides; Sulphur oxides; Sodium oxides; irritating fumes and smoke.

NFPA Rating

- | | | | | |
|------------------|------------------------|-----------------------|-------------------------|------------|
| 0 - Minimal | 1 - Slight | 2 - Moderate | 3 - Serious | 4 - Severe |
| <hr/> | | | | |
| <i>Health:</i> 2 | <i>Flammability:</i> 1 | <i>Instability:</i> 0 | <i>Special Hazards:</i> | 0 |

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up.

Environmental precautions

- : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup

- : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials

- : Do not use combustible absorbents, such as sawdust.

Special spill response procedures

- : In case of a transportation accident, in the United States contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Ethylene thiourea (10 lbs / 4.54 kg)

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures

- : Use in a well ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Use proper bonding and grounding techniques when transferring liquid. Avoid contact with incompatible materials. Wash thoroughly after handling.

Storage requirements

- : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials

- : Strong oxidizing agents; mineral acids

Special packaging materials

- : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits				
Ingredients	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Disodium ethylene bisdithiocarbamate	N/Av	N/Av	N/Av	N/Av
Sodium dimethyldithiocarbamate	N/Av	N/Av	N/Av	N/Av
Ethylene thiourea	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers.

Skin protection

: Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

Eye / face protection

: Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Wear resistant clothing and boots. Other equipment may be required depending on workplace standards. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: Clear, yellow-green liquid.
Odour	: Sulphur odour.	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: N/Av	Specific gravity	: 1.176
Melting/Freezing point	: >100°C / >212°F	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: Complete
Vapour density (Air = 1)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: Equal to water
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: (approximately) 70%
Flash point	: Non-flammable.		
Flash point Method	: Tag closed cup	Auto-ignition temperature	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Upper flammable limit (% by vol.)	: N/Av
Flame Projection Length	: N/Av	Flashback observed	: N/Av

Section 10: Stability And Reactivity

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Will not occur.
Conditions to avoid	: Avoid heat and open flame. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas.
Materials To Avoid And Incompatibility	: See Section 7 (Handling and Storage) section for further details.
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system, digestive system.

Routes of exposure : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES
Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Disodium ethylene bisdithiocarbamate	N/Av	395 mg/kg	N/Av
Sodium dimethyldithiocarbamate	N/Av	1000 mg/kg	>5000 mg/kg
Ethylene thiourea	N/Av	1832 mg/kg	N/Av

Carcinogenic status : Contains the following chemical(s) listed as an Anticipated Carcinogen by NTP:
Ethylene thiourea

Reproductive effects : Contains material that may cause adverse reproductive effects. This product contains:
Sodium dimethyldithiocarbamate; Disodium ethylene bisdithiocarbamate

Teratogenicity : Contains a chemical or chemicals which may be teratogenic. This product contains:
Sodium dimethyldithiocarbamate; Disodium ethylene bisdithiocarbamate

Mutagenicity : Not expected to be mutagenic in humans.

Epidemiology : Not available.

Sensitization to material : May cause sensitization of susceptible persons by skin contact.

Synergistic materials : Not available.

Irritancy : May cause eye, skin and respiratory tract irritation.

other important hazards : None known or reported by the manufacturer.

Conditions aggravated by overexposure : Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself.

Bioaccumulation potential : No data is available on the product itself.

Other Adverse Environmental effects : The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	None	Not regulated.	Not regulated	none	
49CFR/DOT Additional information	None.				

TDG	None	Not regulated.	Not regulated	none	
TDG Additional information	None.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). See Section 2.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Acute Health Hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Sodium dimethyldithiocarbamate; Disodium ethylene bisdithiocarbamate; Ethylene thiourea

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

International Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). See Section 2.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16 - OTHER INFORMATION


HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: *2 *Flammability:* 1 *Reactivity:* 0

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 MSHA: Mine Safety and Health Administration
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit

TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TPQ: Threshold Planning Quantity
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2009
- 2. International Agency for Research on Cancer Monographs, searched 2009
- 3. Canadian Centre for Occupational Health and Safety, CCHInfoWeb databases (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheet from manufacturer.
- 5. US EPA Title III List of Lists
- 6. California Proposition 65 List

<p>Prepared for: FPPF Chemical Company, Inc. 117 West Tupper Street Buffalo, NY, USA 14201 Telephone: 1-800-735-3773 Please direct all enquiries to FPPF Chemical Company</p>	
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Preparation Date (dd/mm/yyyy)

: 29/03/2010

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