FPPF Chemical Company, Inc.
117 West Tupper Street
Buffalo, NY, USA, 14201
Telephone: (800) 735-3773

Killem

SDS Preparation Date (mm/dd/yyyy): 04/02/2020

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label : **Killem**

Other means of identification : 90119, 90330, 00170

Recommended use of the chemical and restrictions on use

: Biocidal product.
No restrictions on use known.

Chemical family : Mixture.

Name, address, and telephone number of the supplier:

FPPF Chemical Company, Inc.

117 West Tupper Street
Buffalo, NY, USA 14201

Name, address, and telephone number of the manufacturer:

Refer to supplier

Supplier's Telephone # : (800)735-3773

24 Hr. Emergency Tel # : PERS: North America 1-800-633-8253; International: +1-801-629-0667

Contract number: 8027

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear amber liquid. Slight odor.

Most important hazards: Fatal if inhaled. Causes skin and eye burns. Combustible liquid. May be ignited by open flames and sparks. May cause an allergic skin reaction.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification :
Flammable Liquid - Category 4
Acute toxicity, inhalation - Category 2
Skin Corrosion/Irritation - Category 1
Eye Damage/Irritation - Category 1
Skin sensitization - Category 1

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

Combustible liquid.
Causes severe skin burns and eye damage.
Fatal if inhaled.
May cause an allergic skin reaction.

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Precautionary statement(s)

Keep away from flames and hot surfaces. - No smoking.
Wear protective gloves/clothing and eye/face protection.
[In case of inadequate ventilation] wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Do not breathe mist.
Wash thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.

Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before re-use.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Immediately call a poison center/doctor.
In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store in well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification: Burning produces obnoxious and toxic fumes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Thiocyanates	Proprietary	Proprietary	**1.0 - 5.0**
Thiocyanates methyl esters	Proprietary	Proprietary	**1.0 - 5.0**

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth if victim is unconscious. Immediately call a POISON CENTER or doctor/physician.

Inhalation : Call a physician immediately. If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration.

Skin contact : IF ON SKIN: Wash with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. Immediately call a POISON CENTER or doctor/physician.

Eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 20 minutes. Immediately call a POISON CENTER or doctor/physician.

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Most important symptoms and effects, both acute and delayed

: Fatal if inhaled. Symptoms may include coughing, choking and wheezing. Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Causes skin burns. Symptoms may include redness, blistering, pain and swelling. May cause an allergic skin reaction (e.g. swelling, rash and eczema).

Indication of any immediate medical attention and special treatment needed

: Immediate medical attention is required. Causes chemical burns. Treat symptomatically. Contains isocyanates. See information supplied by the manufacturer.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

: Do not use water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Combustible liquid and vapor. Keep away from heat, sparks and open flames. May be sensitive to static discharge. Product may float, and be re-ignited at the water's surface. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquid - Category 4

Hazardous combustion products

: Carbon oxides; Nitrogen oxides; Sulfur oxides;hydrogen cyanide

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Use water spray to keep containers cool. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply or any natural waterway. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Individuals involved in the cleanup must wear appropriate personal protective equipment.For personal protection see section 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Dike for water control. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Do not use combustible absorbents, such as sawdust. Use only non-sparking tools. Bond and ground transfer containers and equipment to avoid static accumulation. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

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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: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): See section 15.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: In case of inadequate ventilation wear respiratory protection. Wear protective gloves/clothing and eye/face protection.
Keep away from flames and hot surfaces. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used. Do not breathe mist. Avoid contact with eyes, skin and clothing. Wash hands thoroughly after handling. Avoid contact with incompatible materials.

Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F. Store locked up. 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 : Oxidizing agents

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Thiocyanates	N/Av	N/Av	N/Av	N/Av
Thiocyanic acid, (2-benzothiazolylthio)methyl ester	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use only outdoors or in a well-ventilated area. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection : Wear protective gloves/clothing. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection : Wear as appropriate: Safety glasses with side-shields or chemical splash goggles.A full face shield may also be necessary.

Other protective equipment : Eye wash facilities and emergency shower must be available when handling this product. Other equipment may be required depending on workplace standards.

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General hygiene considerations

: Do not breathe mist. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear amber liquid.
Odour : Slight odour.
Odour threshold : N/Av
pH : N/Av
Melting Point/Freezing point : < -30°C (< -22°F)
Initial boiling point and boiling range
: >100°F (>212°C)
Flash point : 70°C (158°F)
Flashpoint (Method) : Tag closed cup
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : N/Ap
Lower flammable limit (% by vol.)
: N/Av
Upper flammable limit (% by vol.)
: N/Av
Oxidizing properties : None.
Explosive properties : Not explosive
Vapour pressure : N/Av
Vapour density : N/Av
Relative density / Specific gravity
: 1.03
Solubility in water : N/Av
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Av
Auto-ignition temperature : N/Av
Decomposition temperature : N/Av
Viscosity : N/Av
Volatiles (% by weight) : N/Av
Volatile organic Compounds (VOC's)
: N/Av
Absolute pressure of container
: N/Ap
Flame projection length : N/Av
Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions
: Hazardous polymerization does not occur.

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Conditions to avoid : Keep away from heat, sparks and flame.Do not use in areas without adequate ventilation. Take precautionary measures against static discharge. Avoid contact with incompatible materials.

Incompatible materials : Oxidizing agents

Hazardous decomposition products

: hydrogen cyanide Refer also to hazardous combustion products, Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : NO

Routes of exposure skin absorption

: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Fatal if inhaled. May cause respiratory irritation. Symptoms may include coughing, choking and wheezing.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Causes severe burns. Symptoms may include blistering, ulcerations and scarring.

Sign and symptoms eyes : Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage.

Potential Chronic Health Effects

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

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: This product is not expected to cause reproductive or developmental effects.

Sensitization to material : May cause an allergic skin reaction (e.g. swelling, rash and eczema). Not expected to be a respiratory sensitizer.

Specific target organ effects : The substance or mixture is not classified as specific target organ toxicant, single exposure.
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Medical conditions aggravated by overexposure

: Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is being used.

Synergistic materials : Not available.

Toxicological data : The calculated ATE values for this mixture are: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.
ATE oral = 2676 mg/kg
ATE inhalation (mists) = 0.28 mg/L

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Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Thiocyanates	0.0077mg/L	55 mg/kg	N/Av
Thiocyanates methyl esters	N/Av	2 g/kg	>5 g/kg

Other important toxicological hazards
: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Very toxic to aquatic life with long lasting effects. Avoid release to the environment.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Thiocyanates	Proprietary	0.23 mg/L	N/Av	N/Av
Thiocyanates methyl esters	Proprietary	N/Av	N/Av	N/Av

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Thiocyanates	Proprietary	0.011 mg/L	N/Av	N/Av
Thiocyanates methyl esters	Proprietary	N/Av	N/Av	N/Av

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Thiocyanates	Proprietary	N/Av	N/Av	N/Av
Thiocyanates methyl esters	Proprietary	N/Av	N/Av	N/Av

Persistence and degradability
: No data is available on the product itself.

Bioaccumulation potential : No data is available on the product itself. See the following data for ingredient information.

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Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Thiocyanates	N/Av	N/Av
Thiocyanates methyl esters	3.23	N/Av

Mobility in soil : 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 in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable regulations.

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.

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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN2922	CORROSIVE LIQUID, TOXIC, N.O.S. (Methylene bis thiocyanate)	8(6.1)	III	
TDG Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass.				
IMDG	UN2922	CORROSIVE LIQUID, TOXIC, N.O.S. (Methylene bis (thiocyanate)	8(6.1)	III	
IMDG Additional information	Consult the IMDG regulations for exceptions.				
ICAO/IATA	UN2922	Corrosive liquid, toxic, n.o.s.(Methylene bis thiocyanate)	8(6.1)	III	
ICAO/IATA Additional information	Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.				
49CFR/DOT	UN2922	Corrosive liquids, toxic, n.o.s. .((Methylene bis thiocyanate)	8	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.154.				

Special precautions for user : Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame - No smoking.

Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Thiocyanates	Proprietary	Yes	N/Ap	N/Av	No	No
Thiocyanates methyl esters	Proprietary	No	N/Ap	N/Av	No	No

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

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Thiocyanates	Proprietary	No	N/Ap	No	No	No	No	No	No
Thiocyanates methyl esters	Proprietary	No	N/Ap	No	Yes	No	Yes	No	No

Canadian Information:
Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL). Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Thiocyanates	Proprietary	Proprietary	Present	Present	Present	Present	Present	May be used as a single component chemical under an appropriate group standard.
Thiocyanates methyl esters	Proprietary	Proprietary	Present	Present	Present	Present	Present	Present

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
ATE: Acute Toxicity Estimate
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
CSA: Canadian Standards Association
DOT: Department of Transportation
EC50: Effective Concentration 50%
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency

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HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
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 : Material Safety Data Sheet from manufacturer.

OECD - The Global Portal to Information on Chemical Substances

European Chemicals Agency, Classification Legislation

Preparation Date (mm/dd/yyyy)

: 04/02/2020

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for:

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Please direct all enquiries to FPPF Chemical Company

DISCLAIMER

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This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of FPPF Chemical Company, Inc.

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