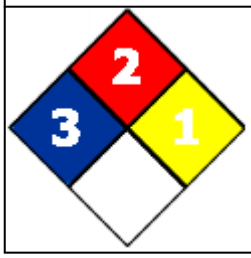
MATERIAL SAFETY DATA SHEET

United Phosphorus, Inc.

NFPA	PPE
	   

Issued Date 19-May-2011 **Revision date** 28-Mar-2014 **Revision Number:** 2

1. PRODUCT AND COMPANY IDENTIFICATION

UPI
630 Freedom Business Center
Suite 402
King of Prussia,PA 19406

Emergency telephone number
Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center
(866) 673-6671 (24hrs)

Company Information	Contact Information	Phone number	Available Hrs
UPI	Customer Service	1-800-438-6071	8:00 am to 5:00 pm EST
	R&D Technical Service	610-878-6100	8:00 am - 5:00 pm (EST)

Product name Perm Up
EPA Reg # PMRA Reg # 28877
Recommended use Insecticide
Product code 12U-119CA

2. Hazards Identification

EMERGENCY OVERVIEW
Toxic by inhalation
May cause drowsiness and dizziness

DANGER CAUTION WARNING
appearance amber. **Physical state** liquid. **Odor** Slight. Odor.

Potential health effects

- Inhalation
- Skin Contact

EYES Contact with eyes may cause irritation.
skin MAY CAUSE SKIN IRRITATION.
Inhalation Immediate medical attention is required. Toxic by inhalation. Avoid breathing vapors or mists. Poison - may be fatal if inhaled.
Ingestion Ingestion may cause irritation to mucous membranes.

3. Composition/information on Ingredients

Ingredients Name

Component	CAS-No	Weight %	OSHA PEL
Triacetin 102-76-1 (20-40)	102-76-1	20-40	N/A
Permethrin technical 52645-53-1 (36.8)	52645-53-1	36.8	N/A
Varsol 8052-41-3 (26)	8052-41-3	26	TWA: 500 ppm TWA: 2900 mg/m^3 (vacated) TWA: 100 ppm (vacated) TWA: 525 mg/m^3
Ethyl benzene 100-41-4 (<0.1)	100-41-4	<0.1	TWA: 100 ppm TWA: 435 mg/m^3 (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m^3 (vacated) STEL: 125 ppm (vacated) STEL: 545 mg/m^3
1,2,4-trimethyl benzene 95-63-6 (<4)	95-63-6	<4	N/A

4. First aid measures

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes
Keep eye wide open while rinsing
If symptoms persist, call a physician

Skin contact

If skin irritation persists, call a physician
Immediate medical attention is not required
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes

Inhalation

Move to fresh air in case of accidental inhalation of vapors or decomposition products
If symptoms persist, call a physician
Immediate medical attention is required
Call a physician or poison control center immediately
Toxic by inhalation

Ingestion

Do not induce vomiting without medical advice
Never give anything by mouth to an unconscious person
Consult a physician
Clean mouth with water and drink afterwards plenty of water afterwards

Notes to physician

Treat symptomatically

5. Fire-fighting measures

Flammable Explosive Properties

flash point
44
°C
/
111

°F

Autoignition temperature	Not Available
Flammability Limits in Air	Not available
Extnguishing Media	Carbon dioxide (CO2) Foam Water spray Dry powder
Fire/Explosion Hazard	Combustible material NOTE: Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to free-fall or be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or any flammable materials which may come into contact with the material or its container. Keep product and empty container away from heat and sources of ignition
Hazardous combustion products	Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.

NFPA **HEALTH** 3 **flammability** 2 **Instability** 1

6. Accidental release measures

Personal Precautions	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
Methods for Clean-Up	Pick up and transfer to properly labelled containers. Dam up. Soak up with inert absorbent material.

7. Handling and Storage

Handling	Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapours or spray mist. Use product only in closed system.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Protect from light. Keep in properly labelled containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL
Varsol	TWA: 100 ppm	TWA: 500 ppm TWA: 2900 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 525 mg/m³
Ethyl benzene	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m³ (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m³ (vacated) STEL: 125 ppm (vacated) STEL: 545 mg/m³

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/Face Protection Tightly fitting safety goggles. Face-shield.
Skin protection Long sleeved clothing. Boots. Apron. Impervious butyl rubber gloves.
Respiratory protection In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

General hygiene considerations
When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing.

9. Physical and Chemical Properties

appearance	amber	**Odor**	Slight Odor
Physical state	liquid	**pH**	approx 4.9
Boiling Point/Range	Not Available	**Melting Point/Range**	5.9 °C / 43 °F
Specific gravity	1.039 @20 C	**solubility**	Emulsifies
evaporation rate	Not Available	**vapor pressure**	Not Available
vapor density	Not Available	**VOC Content**	3.02999999932945
viscosity	Not Available	**molecular weight**	No Data Available
Bulk density	8.65 lb/gal	**Percent Solids**	Not Available
Percent Volatiles	Not Available		

10. Stability and Reactivity

stability Fire hazard Stable under recommended storage conditions

Conditions to avoid Keep away from open flames, hot surfaces and sources of ignition

incompatible materials Strong oxidizing agents

Hazardous decomposition products Carbon oxides

Possibility of Hazardous Polymerization None under normal processing

11. Toxicological Information

Acute toxicity

Product information **Perm-Up 3.2**

Acute oral LD50	**1030 mg/kg (rat)**
Acute dermal LD50	**>2,000 mg.kg (rabbit)**
Acute inhalation LC50	**>25.7 mg/L/4hr(rat)**
Eye irritation	**Moderately irritating**
Skin irritation	**Moderately irritating**

Dermal sensitization **Not a sensitizer**

Skin sensitizations are reversible and usually subside within 12 hours. Permethrin contact with skin has rarely produced skin sensitizations such as numbing, burning, and tingling. Large doses of permethrin to laboratory animals have produced symptoms such as dirrhea, salivation, tremors, intermittent convulsions. Overexposure to animals via inhalation has also produced hyperactivity and hypersensitivity.

Permethrin did not cause resproductive toxicity or teratogenicity. Analysis of chronic feeding studies in both mice and rats with permethrin resulted in the conclusion that permethrin's potential for induction of oncogenicity in experimental animals is low and the likelihood of oncogenic effects in human is nonexistent or extremely low. Long term feeding studies in animals resulted in increased liver and kidney weights, induction of the liver microsomal drug metabolizing enzyme system, and histopathological changes in the liver and lungs. An overall absence of genotoxicity has been demonstrated in mutagenicity testing with permethrin.

Chronic toxicity

Carcinogenicity The information below indicates whether any agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Permethrin technical		Group 3		
Ethyl benzene	A3	Group 2B		X

12. Ecological Information

ecotoxicity

Permethrin

When applied at agricultural use rates, permethrin has a moderate rate of degradation in soil. At termicidal use rates, permethrin degrades as a slower rate which is governed by soil characteristics such as soil type, microbial population, concentration in soil, and aerobis conditions of the soils. Due to its high affinity for organic matter (Koc=86,000), there is little potential for movement in soil or entry into ground water. Permethrin has a Log Pow of 6.1, but a low potential to bioconcentrate (BCF= 500) due to the ease which it is metabolized.

Extremely toxic to fish LC50 = 0.05 ug/L to 315 ug/l
Extremely toxic to aquatic arthopods LC50 =0.02 ug/L to 7.6 ug/L

Marine species are often more sensitive than freshwater species. Bacteria, algae, mollusks and amphibians are much more tolerant of permethrin than the fish and arthropods. Care should be taken to avoid contamination of the aquatic environment. Permethrin is slightly toxic to birds and oral LD50 values are greater than 3,600 mg/kg. Longer dietary studies showeed that concentrations of up to 500ppm in the diet had no effect on bird reproduction.

13. Disposal Considerations

Waste Disposal Method Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport Information

DOT

Proper shipping name Flammable liquid, n.o.s (hydrocarbon solvent, 1,2,4-trimethylbenzene)

Hazard class	3
UN-No	UN1993
Packing group	PG III
Marine Pollutant	Y. (Permethrin). This product contains a chemical which is listed as a marine pollutant according to DOT.

ICAO

UN-No	UN1993
Proper shipping name	Flammable liquid, n.o.s (hydrocarbon solvent, 1,2,4-trimethylbenzene)
Hazard class	3
Packing group	PG III
Description	Marine Pollutant (Permethrin)

IATA

UN-No	UN1993
Proper shipping name	Flammable liquid, n.o.s (hydrocarbon solvent, 1,2,4-trimethylbenzene)
Hazard class	3
Packing group	PG III
ERG Code	3 L
Description	Marine Pollutant (Permethrin)

IMDG/IMO

Proper shipping name	Flammable liquid, n.o.s (hydrocarbon solvent, 1,2,4-trimethylbenzene)
Hazard class	3
UN-No	UN1993
Packing group	PG III
Marine Pollutant	Yes Specified Class 1 Substances PRTR

TDG

Proper shipping name	Flammable liquid, n.o.s (hydrocarbon solvent, 1,2,4-trimethylbenzene)
Hazard class	3
UN-No	UN1993
Packing group	PG III

15. Regulatory Information

International Inventories

Chemical name	TSCA	DSL	NDSL	EINECS/ ELINCS	ENCS	China	KECL	AICS
Triacetin	Present	X		X	Present	X	Present	X
Permethrin technical				X	Present	X	Present	X
Varsol	Present	X		X	Present	X	Present	X
Ethyl benzene	Present	X		X	Present	X	Present	X
1,2,4-trimethyl benzene	Present	X		X	Present	X	Present	X

USA

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values
Permethrin technical	52645-53-1	36.8	1.0
Ethyl benzene	100-41-4	<0.1	0.1
1,2,4-trimethyl benzene	95-63-6	<4	1.0

SARA 311/312 Hazardous Categorization

Chronic health hazard	yes
Acute health hazard	yes
Fire hazard	yes
Sudden release of pressure hazard	No
Reactive Hazard	yes

Clean Water Act

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ethyl benzene 100-41-4 (<0.1)	1000 lb	X	X	X

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following HAPs:

Chemical name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Ethyl benzene	100-41-4	<0.1		Group I		

CERCLA

Component	RQ
Ethyl benzene 100-41-4 (<0.1)	1000 lb

SARA Product RQ 0

RCRA

Pesticide Information

Component	FIFRA - Restricted Use	FIFRA - Pesticide Product Other Ingredients	FIFRA - Listing of Pesticide Chemicals	California Pesticides - Restricted Materials
Triacetin 102-76-1 (20-40)			X	
Permethrin technical 52645-53-1 (36.8)			X	

State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

Chemical name	CAS-No	CATEGORY	California Prop. 65	Non-additive, corrosive chemical type
Ethyl benzene	100-41-4	Carcinogen	Carcinogen	

State Right-to-Know

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Permethrin technical	X	X		X	
Varsol	X	X	X		
Ethyl benzene	X	X	X	X	
1,2,4-trimethyl benzene	X	X	X	X	

International regulations

Mexico - Grade Moderate risk, Grade 2

Component	CATEGORY	Carcinogen Status	Exposure limits
Varsol 8052-41-3 (26)			Mexico: TWA 100 ppm Mexico: TWA 523 mg/m^3 Mexico: STEL 200 ppm Mexico: STEL 1050 mg/m^3
Ethyl benzene 100-41-4 (<0.1)	Carcinogen		Mexico: TWA 100 ppm Mexico: TWA 435 mg/m^3 Mexico: STEL 125 ppm Mexico: STEL 545 mg/m^3

CANADA

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

WHMIS Hazard Class
Not Determined

Chemical name	NPRI
Varsol	X
Ethyl benzene	X
1,2,4-trimethyl benzene	X

Legend
NPRI - National Pollutant Release Inventory

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

16. Other Information

Revision date 28-Mar-2014

Revision Summary
Update Section 16

Miscellaneous

TDG regulations:
UN1993
Flammable liquids, n.o.s. (hydrocarbon solvent, 1,2,4-trimethylbenzene)
3
PG III
Marine Pollutant (permethrin)

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End of MSDS