



SAFETY DATA SHEET

Issue Date 04-Mar-2017

Revision Date 04-Mar-2017

Version 1

1. IDENTIFICATION

Product identifier

Product Name ReTurn™

Other means of identification

Product Code 83100-53-83979

UN/ID no UN2991

Synonyms

Registration Number(s) 83100-53-83979

Recommended use of the chemical and restrictions on use

Recommended Use Insecticide Miticide

Uses advised against Consumer use

Details of the supplier of the safety data sheet

Manufacturer Address

Rotam North America, Inc.
4900 Koger Blvd., Suite 140
Greensboro, NC 27407
Website: msds@rotam.com

Emergency telephone number

Company Phone Number 1-866-927-6826 (toll free)

1-336-346-8802

Emergency Telephone

CHEMTREC: 800-424-9300

CHEMTREC: 703-527-3887

POISON CONTROL CENTER: 800-222-1222

NPIC: 1-800-858-7378

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 2
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

Fatal if swallowed

Fatal if inhaled

May cause cancer

Causes damage to organs

Flammable liquid and vapor

**Appearance** clear liquid**Physical state** liquid**Odor** Pungent**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear respiratory protection
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ ventilating/ lighting/ equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool

Precautionary Statements - Response

Specific treatment is urgent (see instructions on this label)
 IF exposed: Call a POISON CENTER or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth
 In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

May be harmful in contact with skin. Toxic to aquatic life with long lasting effects.

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Name	CAS No	Weight-%
Other ingredients	Proprietary	47.0

Oxamyl	23135-22-0	24.0
Methyl alcohol *	67-56-1	10 - 30
Propylene carbonate *	108-32-7	5 - 10

*The exact percentage (concentration) of composition has been withheld as a trade secret. If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice	Call a poison control center or doctor for treatment advice. Have the product containers or label with you when calling a poison control center or doctor, or going for treatment.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician. Call a poison control center or doctor for treatment advice.
Inhalation	Move victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician or poison control center immediately. Call a poison control center or doctor for treatment advice.
Ingestion	Call a physician or poison control center immediately. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms	Oxamyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors. Methanol may cause blindness.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	ATROPINE IS AN ANTIDOTE: SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONING. TREATMENT: Atropine sulfate should be used for treatment. Administer repeated doses, 1.2 to 2.0 mg intravenously every 10 to 30 minutes until full atropinization is achieved. Maintain atropinization until the patient recovers. Artificial respiration or oxygen may be necessary. Allow no further exposure to any cholinesterase inhibitor until recovery is assured. Do not use 2-PAM for exposure to ReTurn™ alone. However, for exposure to combinations of ReTurn™ and organophosphorous insecticides, 2-PAM may be used as required to supplement the atropine sulfate treatment. Do not use morphine.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal. Water spray, fog or regular foam.

Unsuitable extinguishing media None.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Runoff may pollute waterways.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition.

For emergency responders Use personal protection recommended in Section 8. Ventilate the area.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Cover liquid spill with sand, earth or other non-combustible absorbent material. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Keep in properly labeled containers. Keep away from sources of ignition - No smoking.

Packaging materials Do not reuse container.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methyl alcohol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³

Legend

S* - Skin Absorber

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. And. Showers. Eyewash stations. Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing. Wear protective butyl rubber gloves. Protective shoes or boots.
Respiratory protection	Ensure adequate ventilation, especially in confined areas. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	liquid	Odor	Pungent
Appearance	clear liquid	Odor threshold	No information available
Color	green		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	4.26	solution (1 %)	
Melting point / freezing point	No information available		
Boiling point / boiling range	No information available		
Flash point	38.6 °C / 101.5 °F	Seta Closed Cup	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
Vapor pressure	~17 mmHg	@ 20 °C	
Vapor density	No information available		
Relative density	1.05 g/cm ³		
Water solubility	Miscible in water		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	2.0 mm ² /s	@ 40 °C	
Dynamic viscosity	2.1 mPa s	@ 40 °C	
Explosive properties	Not an explosive		
Oxidizing properties	Not applicable		

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available

Density No information available
Bulk density No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Elevated Temperature. Storage near to reactive materials.

Incompatible materials

Strong oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Nitrogen oxides (NOx). Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Acute Oral LD50 (rat): 15 mg/kg
 Acute Dermal LD50 (rabbit): > 2000 mg/kg
 Eye Irritation (rabbit): Not an irritant.
 Skin Irritation (rabbit): Not an irritant.
 Inhalation LC50 (rat): 0.26 mg/L (4 HR)
 Skin Sensitization (guinea pig): Not a sensitizer

Inhalation

Poison - may be fatal if inhaled.

Eye contact

Based on available data, the classification criteria are not met. Inhalation, ingestion, or skin absorption of methanol can cause blindness.

Skin contact

May be absorbed through the skin in harmful amounts.

Ingestion

May be fatal if swallowed.

Component Information

Inhalation, ingestion, or skin absorption of methanol can cause blindness

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Other ingredients	> 90 mL/kg (Rat)	-	-
Oxamyl 23135-22-0	= 2.5 mg/kg (Rat) = 5.4 mg/kg (Rat)	> 1200 mg/kg (Rat) = 1200 mg/kg (Rat) = 740 mg/kg (Rabbit)	= 170 mg/m ³ (Rat) 1 h
Methyl alcohol 67-56-1	= 6200 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Propylene carbonate 108-32-7	= 29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-

Information on toxicological effects

Symptoms

Oxamyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors. Methanol may cause blindness.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Oxamyl 23135-22-0	-	Group 2A	-	X

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity Based on available data, the classification criteria are not met.
STOT - single exposure Specific target organ toxicity (STOT) - single exposure, category 1. Target Organs. Eyes. Central nervous system.
STOT - repeated exposure Based on available data, the classification criteria are not met.
Aspiration hazard Based on available data, the classification criteria are not met.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	20.00 mg/kg
ATEmix (dermal)	1,125.00 mg/kg
ATEmix (inhalation-dust/mist)	0.19 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

This pesticide is toxic to aquatic organisms (fish and invertebrates) and extremely toxic to birds and mammals. Cover or disc spill areas. Birds and mammals in treated areas may be killed. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing of equipment waste waters.

This product can contaminate surface water through ground spray applications. Under some conditions, it may also have a high potential for runoff into surface water after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, area overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-laying tile drainage systems that drain to surface water. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops or weeds if bees are visiting the treatment area

47 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Oxamyl 23135-22-0	-	4.2: 96 h Oncorhynchus mykiss mg/L LC50 5.6: 96 h Lepomis macrochirus mg/L LC50 8.3: 96 h Pimephales promelas mg/L LC50 flow-through	-
Methyl alcohol 67-56-1	-	100: 96 h Pimephales promelas mg/L LC50 static 28200: 96 h Pimephales promelas mg/L LC50 flow-through 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static	-
Propylene carbonate 108-32-7	500: 72 h Desmodesmus subspicatus mg/L EC50	1000: 96 h Cyprinus carpio mg/L LC50 semi-static 5300: 96 h Leuciscus idus mg/L LC50 static	500: 48 h Daphnia magna mg/L EC50

Persistence and degradability

Not readily biodegradable.

Bioaccumulation

Not likely to bioaccumulate.

Chemical Name	Partition coefficient
Methyl alcohol 67-56-1	-0.77
Propylene carbonate 108-32-7	0.48

Other adverse effects

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Disposal of wastes**

Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Disposal should be in accordance with applicable regional, national and local laws and regulations. Contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance on proper disposal of waste product.

Contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations. Consult product label for additional information. Do not reuse container.

US EPA Waste Number

D001 U154 P194

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Oxamyl 23135-22-0	P194	-	-	-
Methyl alcohol 67-56-1	-	Included in waste stream: F039	-	U154

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Oxamyl 23135-22-0	-	P194	-	-

Chemical Name	California Hazardous Waste Status
Oxamyl 23135-22-0	Toxic
Methyl alcohol 67-56-1	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no UN2991
Proper shipping name Carbamate pesticides, liquid, toxic, flammable
Hazard Class 6.1
Subsidiary class 3
Packing Group II
Special Provisions IB2, T11, TP2, TP13, TP27
Description UN2991, Carbamate pesticides, liquid, toxic, flammable mixture, 6.1 (3), II
Emergency Response Guide Number 131

TDG

UN/ID no UN2991
Proper shipping name Carbamate pesticide, liquid, toxic, flammable mixture
Hazard Class 6.1
Subsidiary class 3
Packing Group II
Description UN2991, Carbamate pesticide, liquid, toxic, flammable mixture (Oxamyl, Methyl alcohol), 6.1 (3), II

IATA

UN/ID no	UN2991
Proper shipping name	Carbamate pesticide, liquid, toxic, flammable
Hazard Class	6.1
Subsidiary hazard class	3
Packing Group	II
ERG Code	6F
Special Provisions	A3, A4
Description	UN2991, Carbamate pesticide, liquid, toxic, flammable (Oxamyl, Methyl alcohol), 6.1 (3), II

IMDG

UN/ID no	UN2991
Proper shipping name	Carbamate pesticide, liquid, toxic, flammable
Hazard Class	6.1
Subsidiary hazard class	3
Packing Group	II
EmS-No	F-E, S-D
Special Provisions	61, 274
Description	UN2991, Carbamate pesticide, liquid, toxic, flammable (Oxamyl, Methyl alcohol), 6.1 (3), II, (38.6°C c.c.) - Marine Pollutant

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US 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 Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Methyl alcohol - 67-56-1	1.0

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Oxamyl 23135-22-0	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Methyl alcohol - 67-56-1	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Other ingredients	-	-	X
Oxamyl 23135-22-0	X	X	X
Methyl alcohol 67-56-1	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number 83100-53-83979

EPA Statement

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. Following is the hazard information as required on the pesticide label:

Difference between SDS and EPA Pesticide label

DANGER/POISON (Skull & Crossbones): Fatal if swallowed. May be fatal if inhaled. Do not breathe vapor or spray mist. Harmful if absorbed through the skin. Avoid contact with skin, eyes, or clothing. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Contains methanol which may cause blindness.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3*	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	* = Chronic Health Hazard			

Issue Date 04-Mar-2017

Revision Date 04-Mar-2017

Revision Note

No information available

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet