



## Material Safety Data Sheet

### SECTION 1. IDENTIFICATION

**Product Name:** Vy-King 24 Insecticide/Nematicide  
**EPA Registration No.:** 88058-8-84237  
**Recommended Use:** Insecticide/Nematicide  
**Manufacturer:** Solera ATO, LLC  
12230 E Del Norte  
Yuma, AZ 85367  
Customer Service (928) 503-1518

**FOR MEDICAL EMERGENCIES, CONTACT the National Poison Information Center 1-800-222-1222**  
**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300**

### SECTION 2. HAZARDS IDENTIFICATION

*NOTE: Please refer to Section 11 for detailed toxicological information.*

#### HAZARD CLASSIFICATION

Flammable Liquids: Category 3; Acute Oral Toxicity: Category 2; Acute Inhalation Toxicity: Category 2;  
Specific Organ Toxicity: 1

#### SIGNAL WORD

Danger

#### HAZARD STATEMENTS

Flammable liquid and vapor. Fatal if swallowed. May be fatal if inhaled. Contains Methanol which may cause blindness. This pesticide is toxic to aquatic organisms (fish and invertebrates) and extremely toxic to birds and mammals.

#### PICTOGRAMS



#### PRECAUTIONARY STATEMENTS

DANGER-POISON! Fatal if swallowed. Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Do not breathe vapor. Do not get in eyes or on clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash clothing before reuse.

#### DESCRIPTION OF HAZARDS NOT OTHERWISE CLASSIFIED

Residues of Thor can seep or leach through soil and can contaminate ground water which may be used for drinking. Users are advised not to apply Thor where the water table is close to the surface and where soils are very permeable, i.e. well-drained soils such as loamy sands. Local agricultural Agencies can provide information on the soil type in your area and the location of the ground water.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Wt</u>
Oxamyl: (Methyl N',N'-dimethyl-N-((methylcarbamoyl)oxy)-1-thioxamimidate]	23135-22-0	24%
Methanol	108-94-1	40-45%
Other Ingredients		36-41%

### SECTION 4. FIRST AID MEASURES

#### Contains an N-methyl carbamate that inhibits cholinesterase.

**IF SWALLOWED** Call a poison control center or doctor immediately for treatment advice.  
Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger.  
Do not induce vomiting or give anything by mouth to an unconscious person.

**IF INHALED** Move person to fresh air.  
If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.

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

**SECTION 5. FIRE FIGHTING MEASURES**

**FIRE EXTINGUISHING EQUIPMENT:**

Water spray, Dry chemical, Foam, Carbon dioxide (CO2)

**FIRE AND EXPLOSION HAZARDS:**

Vapors may form explosive mixtures with air. Heating can release vapors which can be ignited.

**PPE FOR FIREFIGHTERS/FIRE FIGHTING INSTRUCTIONS:**

In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Evacuate personnel and keep upwind of fire. Shut off source of fuel, if possible and without risk. If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Burns with colorless flame.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS**

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.

**EMERGENCY PROCEDURES**

Prevent material from entering sewers, waterways, or low areas.

**METHODS FOR CLEANING UP**

Soak up with sawdust, sand, oil dry or other absorbent material.

**CLEANUP PROCEDURES**

Dispose of in an approved container. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum.

**SECTION 7. HANDLING AND STORAGE**

**HANDLING PROCEDURES**

Use appropriate personnel protective equipment and engineering controls in accordance with label directions. Keep away from heat and sources of ignition.

**STORING PROCEDURES**

Flammable. Keep away from heat and sources of ignition. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Keep tightly closed in a dry, cool and well ventilated place. Not for use or storage in or around the home. Keep out of the reach of children. Store at temperatures of 45°F or higher. Storage period : No applicable data available. Storage temperature : > 0 °C (> 32 °F)

**WORK/HYGIENIC PROCEDURES**

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE LIMITS**

Oxamyl

AEL \* (DUPONT) 0.05 mg/m3 8 & 12 hr. TWA

Methanol

Permissible exposure limit: (OSHA) 200 ppm 200 mg/m3 8 hr TWA.

TLV (ACGIH) 200 ppm TWA

TLV (ACGIH) 250 ppm STEL

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

## ENGINEERING CONTROLS

### Human flaggers must be in enclosed cabs.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Pilots must not assist in the mixing and loading operations. Mixers and loaders supporting use on cotton in California and Arizona must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides f 40 CFR 170.240(d)(4)]. The system must be designed by the manufacturer to remove a liquid pesticide from its container and transfer it through connecting hoses, pipes, and/or couplings that are sufficiently tight to prevent dermal or inhalation exposure of any person to the pesticide concentrate, use dilution, or rinse solution and must be provided and have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown: coveralls, chemical-resistant footwear, and the type of respirator required for handlers on this labeling. In addition, handlers: may wear long-sleeved shirt and long pants, socks and shoes, chemical resistant gloves and a chemical resistant apron, instead of the PPE required for mixers and loaders on this label must wear protective eyewear if the system operates under pressure.

When handlers use closed systems, or enclosed cabs, in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

## PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category B on an EPA chemical-resistance category selection chart.

### Mixers, loaders, and applicators and other handlers must wear:

Coveralls over long-sleeved shirt and long pants.

Chemical-resistant gloves, such as barrier laminate or butyl rubber.

Chemical-resistant footwear plus socks.

Protective eyewear.

Chemical-resistant headgear for overhead exposure.

Chemical-resistant apron when cleaning equipment, mixing, or loading.

A respirator with an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G) or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Blue
<b>Physical State:</b>	liquid solution
<b>Odor:</b>	Not Characterized
<b>pH:</b>	3.15
<b>Viscosity:</b>	3.14 cSt at 20°C and 1.84 cSt at 40°C
<b>Flash point:</b>	26.1°C
<b>Specific Gravity:</b>	0.9819 (20°/20°).

## SECTION 10. STABILITY AND REACTIVITY

### CHEMICAL STABILITY

Stable at normal temperatures and storage conditions.

### REACTIVITY

No applicable data available.

### OTHER

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid : No applicable data available.

Incompatible materials : None reasonably foreseeable.  
Hazardous decomposition products: No applicable data available.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Thor 24 INSECTICIDE/NEMATICIDE**

acute oral (up/down procedure)	>17.5 mg/kg
acute dermal	>5050 mg/kg
acute inhalation	>0.05 mg/L and <0.13 mg/L
eye irritation	Tox Cat III
dermal irritation	Tox Cat IV
skin sensitization	not a sensitizer

**Oxamyl**

Repeated dose toxicity:  
Oral – feed multiple species- 15 d LOAEL: 0.75 mg/kg  
Reduced body weight gain, cholinesterase inhibition  
Carcinogenicity:  
Did not show carcinogenic effects in animal experiments. Not classifiable as a human carcinogen.  
Mutagenicity:  
Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Reproductive toxicity:  
No toxicity to reproduction Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.  
Teratogenicity:  
Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

**Methanol**

Carcinogenicity:  
Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects.  
Mutagenicity:  
Weight of Evidence does not support classification as a germ cell mutagen. Animal testing did not show any mutagenic effects. Genetic damage in cultured mammalian and bacterial cells was observed in some laboratory tests but not others.  
Reproductive toxicity:  
No toxicity to reproduction Evidence suggests the substance is not a reproductive toxin in animals. No effects on or via lactation  
Teratogenicity: Animal testing showed no developmental toxicity.

**SECTION 12. ECOLOGICAL INFORMATION**

This pesticide is toxic to aquatic organisms (fish and invertebrates) and extremely toxic to birds and mammals. Cover or disk 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, areas 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 overlaying 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.

**AQUATIC TOXICITY**

**Oxamyl**

96 h LC50	Oncorhynchus mykiss (rainbow trout)	3.16 mg/l
72 h ErC50	Pseudokirchneriella subcapitata (green algae)	2.61 mg/l
48 h EC50	Daphnia magna (Water flea)	0.319 mg/l

61 d Early Life-Stage	NOEC Oncorhynchus mykiss (rainbow trout)	0.77 mg/l
21 d flow-through test	NOEC Daphnia magna (Water flea)	0.0268 mg/l

## SECTION 13. DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

### DISPOSAL

Do not contaminate water, food or feed by storage. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by 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

#### Nonrefillable Rigid Plastic and Metal Containers

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. For plastic containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn unless allowed by state and local ordinances. For metal containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## SECTION 14. TRANSPORT INFORMATION

### DOT

UN number:	2991
Proper shipping name:	Carbamate pesticides, liquid, toxic, flammable (Oxamyl, Methanol)
Class:	6.1 (3)
Packing group:	II
Labelling No.:	6.1 (3)
Reportable Quantity:	100 lbs Oxamyl

### IATA\_C

UN number	2991
Proper shipping name:	Carbamate pesticide, liquid, toxic, flammable (Oxamyl, Methanol)
Class:	6.1 (3)
Packing group:	II
Labelling No.:	6.1 (3)

### IMDG

UN number:	2991
Proper shipping name:	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Oxamyl, Methanol)
Class:	6.1 (3)
Packing group:	II
Labelling No.:	6.1 (3)
Marine pollutant:	yes (Oxamyl)

## SECTION 15. REGULATORY INFORMATION

### SARA 313 Regulated Chemical(s):

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### PA Right to Know Regulated Chemical(s):

Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Methanol, Oxamyl

### Title III hazard classification:

Acute Health Hazard: Yes  
 Chronic Health Hazard: No  
 Fire: Yes  
 Reactivity/Physical hazard: No  
 Pressure: No

### CERCLA Reportable Quantity:

402 lbs

Based on the percentage composition of this chemical in the product.: Oxamyl

**SARA Reportable Quantity:**

402 lbs

Based on the percentage composition of this chemical in the product.: Oxamyl

**California Prop. 65:**

Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known.

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 2      Flammability - 3      Reactivity - 0      Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions.

Revision Date : 08-29-18