VAUNT
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification

1.1. Identification

Product name : VAUNT

Product code : 89167-89-89391

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Pesticides

1.3. Supplier

INNVICTIS® CROP CARE, LLC
1880 Fall River Drive, Suite 100
Loveland, CO 80538
T 855-466-8428

1.4. Emergency telephone number

Emergency number : ChemTrec 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids, Category 3	H226 Flammable liquid and vapour.
Acute toxicity (oral), Category 4	H302 Harmful if swallowed.
Serious eye damage/eye irritation, Category 2B	H320 Causes eye irritation
Carcinogenicity, Category 2	H351 Suspected of causing cancer.
Aspiration hazard, Category 1	H304 May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment — Acute Hazard, Category 2	H401 Toxic to aquatic life
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411 Toxic to aquatic life with long lasting effects.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) :
H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.
H304 - May be fatal if swallowed and enters airways.
H320 - Causes eye irritation
H351 - Suspected of causing cancer.
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS US) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - If swallowed: Immediately call a poison center/doctor/…
P301+P312 - If swallowed: Call a poison center/doctor/… if you feel unwell
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse

skin with water/shower
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical attention
P330 - Rinse mouth.
P331 - Do NOT induce vomiting.
P337+P313 - If eye irritation persists: Get medical attention
P370+P378 - In case of fire: Use media other than water to extinguish.
P391 - Collect spillage.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
metalaxyl-M	(CAS-No.) 70630-17-0	25.1	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Other Ingredients	(CAS-No.) 91-20-3	Proprietary	Acute Tox. 4 (Oral), H302 Carc. 2, H351
Other Ingredients	(CAS-No.) 95-63-6	Proprietary	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after eye contact : mild eye irritation.

Symptoms/effects after ingestion : Risk of lung oedema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable solid.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Keep cool. Protect from sunlight. Keep away from ignition sources. Store locked up. Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

VAUNT	
No additional information available	
metalaxyl-M (70630-17-0)	
No additional information available	
naphthalene (91-20-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (ppm)	10 ppm
1,2,4-trimethylbenzene (95-63-6)	
No additional information available	

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Yellow liquid.
Colour	:	Mixture contains one or more component(s) which have the following colour(s): Pure substance: white Unpurified: yellow to brown Colourless
Odour	:	There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Tar odour Aromatic odour
Odour threshold	:	No data available
pH	:	5.17
Melting point	:	No data available
Freezing point	:	Not applicable
Boiling point	:	No data available
Flash point	:	38 °C Not applicable
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Flammable solid.
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	0.982 g/cc
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Viscosity, kinematic	:	4.735 mm²/s Not applicable
Viscosity, dynamic	:	No data available
Explosive limits	:	Not applicable
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable solid.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

VAUNT	
LD50 oral rat	500 – 5000 mg/kg
LD50 dermal rat	5000 mg/kg
LC50 inhalation rat (mg/l)	> 2.06 mg/l/4h
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	5000 mg/kg bodyweight

naphthalene (91-20-3)	
LD50 dermal rat	> 2500 mg/kg (Rat, Dermal)

1,2,4-trimethylbenzene (95-63-6)	
LD50 oral rat	6000 mg/kg bodyweight (EU Method B.1 tris: Acute oral toxic – Acute toxic class method, Rat, Male, Experimental value, Oral, 014 day(s))
LD50 dermal rat	3440 mg/kg (24 h, Rat, Male / female, Read-across, Dermal)
LC50 inhalation rat (mg/l)	> 10.2 mg/l air (4 h, Rat, Male / female, Read-across, Inhalation (vapours), 14 day(s))

Skin corrosion/irritation : Not classified
pH: 5.17
Serious eye damage/irritation : Causes eye irritation.
pH: 5.17
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

naphthalene (91-20-3)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

1,2,4-trimethylbenzene (95-63-6)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : May be fatal if swallowed and enters airways.
Viscosity, kinematic : 4.735 mm²/s Not applicable

Symptoms/effects after eye contact : mild eye irritation.
Symptoms/effects after ingestion : Risk of lung oedema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

VAUNT	
LC50 fish 1	> 121 mg/l Rainbow Trout
EC50 Daphnia 1	> 113 mg/l

naphthalene (91-20-3)	
LC50 fish 1	0.11 mg/l (96 h, Oncorhynchus mykiss, Literature study)
EC50 Daphnia 1	2.16 mg/l (48 h, Daphnia magna, Literature study)

1,2,4-trimethylbenzene (95-63-6)	
LC50 fish 1	7.72 mg/l (96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)

12.2. Persistence and degradability

naphthalene (91-20-3)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O_2/g substance
Chemical oxygen demand (COD)	0.22 g O_2/g substance
ThOD	2.99 g O_2/g substance

1,2,4-trimethylbenzene (95-63-6)	
Persistence and degradability	Not readily biodegradable in water.
Chemical oxygen demand (COD)	0.44 g O_2/g substance

12.3. Bioaccumulative potential

naphthalene (91-20-3)	
BCF fish 1	23 – 168 (8 week(s), Cyprinus carpio, Literature study)
Partition coefficient n-octanol/water (Log Pow)	3.3 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

1,2,4-trimethylbenzene (95-63-6)	
BCF fish 1	243 (Pimephales promelas, QSAR)
Partition coefficient n-octanol/water (Log Pow)	3.63 (Experimental value, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

VAUNT	
Ecology - soil	In soils, Mefenoxam is moderately stable under normal environmental conditions. The primary routes of dissipation in surface soil are aerobic soil metabolism from microbial degradation and uptake by plants. Hydrolysis, photolysis and volatilization are not significant routes of breakdown. Mefenoxam is very water soluble and variably binds to organic materials in the soils. In the aquatic environment, Mefenoxam degrades moderately under both aerobic and anaerobic conditions by microbial degradation.

naphthalene (91-20-3)	
Surface tension	0.03 N/m (100 °C)
Ecology - soil	Adsorbs into the soil.

1,2,4-trimethylbenzene (95-63-6)	
Surface tension	No data available in the literature
Partition coefficient n-octanol/water (Log Koc)	3.04 (log Koc, Calculated value)
Ecology - soil	Low potential for mobility in soil. May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: NA1993 Combustible liquid, n.o.s. (1,2,4 Trimethylbenzene), 3, III
UN-No.(DOT)	: NA1993
Proper Shipping Name (DOT)	: Combustible liquid, n.o.s. (1,2,4 Trimethylbenzene)
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	: III - Minor Danger
Dangerous for the environment	: Yes
Marine pollutant	: Yes

DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: 148 - Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in §173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons). IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel.
Other information	: No supplementary information available.

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

VAUNT		
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:		
metalaxyl-M	CAS-No. 70630-17-0	25.1%
Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.		
naphthalene	CAS-No. 91-20-3	5%
1,2,4-trimethylbenzene	CAS-No. 95-63-6	5%

naphthalene (91-20-3)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

FIFRA Labelling	
EPA Registration Number	89167-89-89391
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.	
FIFRA Signal Word	**Warning**
FIFRA Precautionary Statement	Call a doctor if you feel unwell. Keep out of reach of children.
FIFRA Human Health Hazards	Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through skin. DO NOT get in eyes or on clothing. Avoid contact with skin.
FIFRA First Aid	IF IN EYES • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye • Call a poison control center or doctor for treatment advice IF SWALLOWED • Immediately call a poison control center or doctor • DO NOT induce vomiting unless told to do so by a poison control center or doctor • DO NOT give any liquid to the person • DO NOT give anything by mouth to an unconscious person IF ON SKIN OR CLOTHING • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15 to 20 minutes • Call a poison control center or doctor for treatment advice.
FIFRA Environmental Hazards	DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Apply only as specified on this label. DO NOT apply when weather conditions favor drift from treated areas. DO NOT contaminate water when disposing of equipment washwater or rinsate. Groundwater Advisory This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. Surface Water Advisory This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

15.2. International regulations

CANADA

metalaxyl-M (70630-17-0)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

naphthalene (91-20-3)
Listed on the Canadian DSL (Domestic Substances List)

1,2,4-trimethylbenzene (95-63-6)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

VAUNT
This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use. PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION: Causes moderate eye irritation. Harmful if inhaled. Avoid contact with eyes or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Prolonged or frequent repeated skin contact while handling the material may cause allergic reaction in some individuals.

naphthalene (91-20-3)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations

⚠ **WARNING:** This product can expose you to naphthalene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
naphthalene(91-20-3)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
1,2,4-trimethylbenzene(95-63-6)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

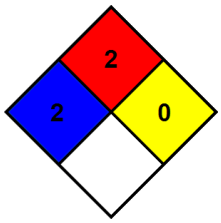
Full text of H-statements:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H320	Causes eye irritation
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects.

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.