

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : OFF-SHOOT-T®
 Other means of identification : EPA Reg. No. 400-542

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Plant growth regulator
 Restrictions on use : Agriculture, For professional users only

1.3. Details of the supplier of the safety data sheet

MacDermid Agricultural Solutions, Inc.
 c/o Arysta LifeScience North America, LLC
 15401 Weston Parkway, Suite 150 Cary, NC 27513 - USA
 T 1-866-761-9397

1.4. Emergency telephone number

Emergency number : Exposure calls (PROPHARMA): 1-866-303-6952 or +1-651-603-3432 (international)
 Spill calls (CHEMTREC) (Contract # CCN1779): +1-800-424-9300 or +1-703-527-3887 (international)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Dermal) H312
 Eye Dam. 1 H318
 Aquatic Chronic 2 H411

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

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H312 - Harmful in contact with skin.
 H318 - Causes serious eye damage.
 H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS-US) : P273 - Avoid release to the environment.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 - If on skin: Wash with plenty of water/...
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 - Immediately call a poison center/doctor/...
 P312 - Call a poison center/doctor/... if you feel unwell
 P322 - Specific treatment (see ... on this label)
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P391 - Collect spillage.
 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

No additional information available

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2.4. Unknown acute toxicity (GHS US)

41.13% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% (w/w)	GHS-US classification
decyl alcohol	(CAS-No.) 112-30-1	48.2	Eye Irrit. 2A, H319 Aquatic Chronic 2, H411
1-octanol	(CAS-No.) 111-87-5	36.2	Flam. Liq. 4, H227 Eye Irrit. 2A, H319
Surfactant	(CAS-No.) trade secret	5 – 15	Eye Dam. 1, H318 Aquatic Chronic 3, H412
Hexanol	(CAS-No.) 25917-35-5	0 – 5	Acute Tox. 4 (Oral), H302
1-Dodecanol	(CAS-No.) 112-53-8	0.3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

*Chemical name, CAS number and/or exact concentration have been withheld as a Surfactant

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Immediately call a POISON CENTER/doctor. Wash skin thoroughly with mild soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. May cause slight irritation.
- Symptoms/effects after eye contact : Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Large fires: alcohol resistant foam. Small fires: Carbon dioxide. Dry chemical. Water spray.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Fight fire with normal precautions from a reasonable distance.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all eye and skin contact and do not breathe vapour and mist. Use personal protective equipment as required.

6.1.1. For non-emergency personnel

- Protective equipment : Refer to section 8.2.
- Emergency procedures : Evacuate unnecessary personnel.

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6.1.2. For emergency responders

Protective equipment : Refer to section 8.2.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OFF-SHOOT-T®	
ACGIH	Not applicable
OSHA	Not applicable
Hexanol (25917-35-5)	
ACGIH	Not applicable
OSHA	Not applicable
1-octanol (111-87-5)	
ACGIH	Not applicable
OSHA	Not applicable
1-Dodecanol (112-53-8)	
ACGIH	Not applicable
OSHA	Not applicable
decyl alcohol (112-30-1)	
ACGIH	Not applicable
OSHA	Not applicable
Surfactant (trade secret)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide local exhaust or general room ventilation.
Personal protective equipment : Avoid all unnecessary exposure.

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Hand protection	: Wear suitable gloves resistant to chemical penetration. barrier laminate. Butyl rubber. neoprene. PVC. Viton.
Eye protection	: Safety glasses with side shields. tightly fitting safety goggles.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Appropriate dust or mist respirator should be used if airborne particles are generated when handling this material.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow
Odour	: Fatty
Odour threshold	: No data available
pH	: 7.9
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 349 °C
Flash point	: > 100 °C
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 0.85 g/cm ³
Solubility	: No data available
Log Pow	: 2.3 - 4.2
Log Kow	: No data available
Auto-ignition temperature	: 274 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

None known.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact
Acute toxicity : Not classified

OFF-SHOOT-T®	
LD50 oral rat	28300 mg/kg
LD50 dermal rabbit	1750 - 2000 mg/kg
LC50 inhalation rat (mg/l)	31 mg/l/4h
ATE US (oral)	28300 mg/kg bodyweight
ATE US (dermal)	1750 mg/kg bodyweight
ATE US (vapours)	31 mg/l/4h
ATE US (dust,mist)	31 mg/l/4h

Hexanol (25917-35-5)	
LD50 oral rat	720 mg/kg
LD50 dermal rabbit	3100 mg/kg
ATE US (oral)	720 mg/kg bodyweight
ATE US (dermal)	3100 mg/kg bodyweight

1-octanol (111-87-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

1-Dodecanol (112-53-8)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	8000 - 12000 mg/kg
ATE US (dermal)	8000 mg/kg bodyweight

decyl alcohol (112-30-1)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 - 4000 mg/kg
ATE US (dermal)	2000 mg/kg bodyweight

Surfactant (trade secret)	
LD50 oral rat	> 5000 mg/kg

Skin corrosion/irritation : Not classified
(Slightly irritant but not relevant for classification)

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. May cause slight irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

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

OFF-SHOOT-T®	
LC50 fish 1	6.5 - 9.9 mg/l 96 h <i>Oncochynchus mykiss</i>

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OFF-SHOOT-T®	
EC50 Daphnia 1	8.2 mg/l 48 h
1-octanol (111-87-5)	
LC50 fish 1	12 - 15 mg/l 96 h Pimephales promelas
LC50 other aquatic organisms 1	10 - 100 mg/l 96
EC50 Daphnia 1	15 - 47 mg/l 24 h
LC50 fish 2	17.68 mg/l 96 h Salmo gairdneri (Onchoychnus mykiss)
EC50 Daphnia 2	20 mg/l
Threshold limit other aquatic organisms 1	10-100 96h
Threshold limit algae 1	6.3 mg/l 168 h Scenedesmus quadricauda
Threshold limit algae 2	1.9 mg/l 192 h Microcystis aeruginosa
1-Dodecanol (112-53-8)	
LC50 fish 1	1.01 mg/l
EC50 Daphnia 1	0.765 mg/l 48 h
decyl alcohol (112-30-1)	
LC50 fish 1	5.05 mg/l 96 h
EC50 Daphnia 1	6.51 mg/l 48 h
NOEC (chronic)	0.11 mg/l 21 d
Surfactant (trade secret)	
LC50 fish 1	> 100 mg/l DIN 38412 Part 15 Leuciscus idus

12.2. Persistence and degradability

OFF-SHOOT-T®	
Persistence and degradability	Readily biodegradable. May cause long-term adverse effects in the environment.
Hexanol (25917-35-5)	
Persistence and degradability	Not expected to persist.
1-Dodecanol (112-53-8)	
Persistence and degradability	Readily biodegradable.
Surfactant (trade secret)	
Persistence and degradability	Not readily biodegradable. Moderately biodegradable.

12.3. Bioaccumulative potential

OFF-SHOOT-T®	
Log Pow	2.3 - 4.2
Bioaccumulative potential	Not established.
Hexanol (25917-35-5)	
Bioaccumulative potential	Does not bioaccumulate significantly.
1-octanol (111-87-5)	
Log Pow	2.7
Bioaccumulative potential	Not expected to bioaccumulate.
1-Dodecanol (112-53-8)	
Log Pow	5.4
decyl alcohol (112-30-1)	
Log Pow	4.5
Surfactant (trade secret)	
Log Pow	0.7 (calculated)

12.4. Mobility in soil

Hexanol (25917-35-5)	
Ecology - soil	Expected to be highly mobile in soil.
1-octanol (111-87-5)	
Surface tension	0.027 N/m

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12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (decyl alcohol), 9, III

UN-No.(DOT) : UN3082
Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. (decyl alcohol)
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Dangerous for the environment : Yes
Marine pollutant : Yes



Additional information

Emergency Response Guide (ERG) Number : 171
Other information : Non-bulk (<= 119 gallons / 450 Liters) Not Regulated; Bulk (> 119 gallons / 450 Liters) Regulated as stated.

Transport by sea

IMDG

Transport hazard class(es) (IMDG) : 9
:
Two diamond-shaped hazard labels side-by-side. The left one is the Class 9 label (stripes and '9'), and the right one is the Marine Pollutant label (tree and bird).
Marine pollutant : Yes
UN-No. (IMDG) : 3082
Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (decyl alcohol), 9, III, MARINE POLLUTANT
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG) : III - substances presenting low danger
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F


Air transport

IATA

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Transport hazard class(es) (IATA)	: 9
	:
	
Marine pollutant	: Yes
UN-No. (IATA)	: 3082
Transport document description (IATA)	: UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (decyl alcohol), 9, III
Class (IATA)	: 9 - Miscellaneous Dangerous Goods
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

1-octanol (111-87-5)

EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under Chemical Data Reporting Rule (formerly the Inventory Update Reporting Rule), i.e., Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 711).
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FIFRA Labelling

EPA Registration Number	400-542
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..	
FIFRA Signal Word	Danger
FIFRA Human Health Hazards	Corrosive. Causes irreversible eye damage. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
FIFRA First Aid	Do not get in eyes or on clothing.
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. Do not contaminate water when disposing of equipment washwater or rinsate.

15.2. International regulations

CANADA

Hexanol (25917-35-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

1-octanol (111-87-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

1-Dodecanol (112-53-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

decyl alcohol (112-30-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Surfactant (trade secret)

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.3. US State regulations

WARNING

This product can expose you to 1,4-dioxane, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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decyl alcohol (112-30-1)

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Data sources : ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. NIOSH Occupational Health Guide for chemical Substances - Vol. II, September, 1978. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information : None.

Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 4	Flammable liquids, Category 4
H227	Combustible liquid
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

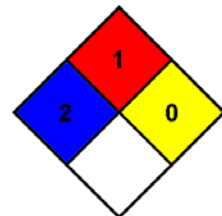
Abbreviations and acronyms:

	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	LD50: Lethal Dose for 50% of the test population
	OSHA: Occupational Safety & Health Administration
	STEL: Short Term Exposure Limits
	TSCA: Toxic Substances Control Act
	TWA: Time Weighted Average

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

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



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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