

Issuing Date 05-May-2020

Revision Date 22-Aug-2022

Revision Number 2

1. Identification

Product identifier

Product Name Willowood Thionil EC

Other means of identification

Product Code(s) 87290-74

Synonyms Thiobencarb + Propanil

Recommended use of the chemical and restrictions on use

Recommended use Herbicide

Restrictions on use Use only as directed on product label

Details of the supplier of the safety data sheet

Manufacturer Address

Generic Crop Science, LLC
1887 Whitney Mesa Drive #9740
Henderson, NV 89014-2069
1-844-200-FARM (3276)

E-mail regulatory@genericcropscience.com

Emergency telephone number

Emergency telephone CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)
24/7 Health Emergencies: Call 800-858-7378 (National Pesticide Information Center)

2. Hazard(s) identification

Classification

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

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Not applicable.

Label elements

Warning

Hazard statements

Harmful if swallowed.

Harmful if inhaled.
Causes serious eye irritation.
Suspected of causing cancer.
May cause respiratory irritation.



Precautionary Statements - Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.
Wash face, hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.

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.

Other information

May be harmful in contact with skin. Causes mild skin irritation. Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
66 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Synonyms

Thiobencarb + Propanil

Chemical name	CAS No	Weight-%	Trade secret
Propanil	709-98-8	30-40	*
Bolero (Thiobencarb)	28249-77-6	30-40	*
Isophorone	78-59-1	20-30	*
Surfactant blend	-	5-10	*

Naphtha (petroleum), heavy aromatic	64742-94-5	1-5	*
Phosphoric acid	7664-38-2	<1	*
Naphthalene	91-20-3	<1	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately.
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. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash skin with soap and water. If skin irritation occurs: Get medical advice/attention.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause redness and tearing of the eyes. Burning sensation. Prolonged contact may cause redness and irritation. Coughing and/ or wheezing. Difficulty in breathing.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray.
Unsuitable extinguishing media	None known based on information supplied.
Specific hazards arising from the chemical	Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Hazardous combustion products	Carbon oxides. Nitrogen oxides (NO _x). Oxides of sulfur. Hydrogen chloride gas.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

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 Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store at ambient conditions. Keep out of the reach of children.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Isophorone 78-59-1	Ceiling: 5 ppm	TWA: 25 ppm TWA: 140 mg/m ³ (vacated) TWA: 4 ppm (vacated) TWA: 23 mg/m ³	IDLH: 200 ppm TWA: 4 ppm TWA: 23 mg/m ³
Phosphoric acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³
Naphthalene 91-20-3	TWA: 10 ppm S*	TWA: 10 ppm TWA: 50 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 50 mg/m ³ (vacated) STEL: 15 ppm (vacated) STEL: 75 mg/m ³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³

Biological occupational exposure limits

Chemical name	ACGIH
Naphthalene 91-20-3	- (1-Naphthol with hydrolysis plus 2-Naphthol with hydrolysis) - end of shift

Appropriate engineering controls

Engineering controls
 Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Goggles.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

Physical state	Liquid
Color	Brown
Odor	No data available
Odor threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	3.85	No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point		No data available
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Vapor density		No data available
Relative density	1.143 g/mL	No data available
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity	69.6053 cSt @ 20 °C	No data available
Dynamic viscosity		No data available

Other information

Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available

Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Excessive heat.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Sulfur oxides. Hydrogen chloride gas.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Causes mild skin irritation. Prolonged contact may cause redness and irritation. May be harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	May cause redness and tearing of the eyes. Prolonged contact may cause redness and irritation. Coughing and/ or wheezing.
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Acute toxicity

Numerical measures of toxicity

No information available

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

ATEmix (oral)	977.10 mg/kg
ATEmix (inhalation-dust/mist)	3.60 mg/l

Unknown acute toxicity

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

66 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Propanil	= 840 mg/kg (Rat)	= 4830 mg/kg (Rabbit)	= 2.8 mg/L (Rat) 4 h

709-98-8			
Bolero (Thiobencarb) 28249-77-6	= 1033 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 42.8 mg/L (Rat) 1 h
Isophorone 78-59-1	= 1870 mg/kg (Rat)	= 1700 mg/kg (Rat)	= 7 mg/L (Rat) 4 h
Naphtha (petroleum), heavy aromatic 64742-94-5	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 590 mg/m ³ (Rat) 4 h
Phosphoric acid 7664-38-2	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat)	= 1120 mg/kg (Rabbit)	> 0.4 mg/L (Rat) 4 h

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

Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Isophorone 78-59-1	A3	Group 2B	-	X
Naphthalene 91-20-3	A3	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

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

X - Present

Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	No information available.
Target organ effects	Liver. Kidney. Respiratory system. Eyes. Skin. Central nervous system.
Aspiration hazard	No information available.
Other adverse effects	No information available.
Interactive effects	No information available.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.
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Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Propanil 709-98-8	EC50: 0.22 - 0.39mg/L (72h, <i>Desmodesmus subspicatus</i>)	LC50: 7.7 - 9.5mg/L (96h, <i>Pimephales promelas</i>) LC50: =0.23mg/L (96h, <i>Pimephales promelas</i>) LC50: <3.7mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 8.4 - 31mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =7.17mg/L (96h, <i>Cyprinus carpio</i>) LC50: 1.8 - 3mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 10.0 - 15.0mg/L (96h, <i>Oncorhynchus mykiss</i>)	-	EC50: =6.7mg/L (48h, <i>Daphnia magna</i>) EC50: =3.55mg/L (48h, <i>Daphnia magna</i>) EC50: 1 - 1.3mg/L (48h, <i>Daphnia magna</i>)
Isophorone 78-59-1	EC50: =475.4mg/L (72h, <i>Desmodesmus subspicatus</i>) EC50: 51.1 - 342mg/L (96h, <i>Pseudokirchneriella subcapitata</i>)	LC50: 132 - 159mg/L (96h, <i>Pimephales promelas</i>) LC50: 180 - 250mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 213 - 271mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: =117mg/L (48h, <i>Daphnia magna</i>)
Naphtha (petroleum), heavy aromatic 64742-94-5	-	LC50: =19mg/L (96h, <i>Pimephales promelas</i>) LC50: =2.34mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =1740mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =45mg/L (96h, <i>Pimephales promelas</i>) LC50: =41mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: =0.95mg/L (48h, <i>Daphnia magna</i>)
Naphthalene 91-20-3	-	LC50: 5.74 - 6.44mg/L (96h, <i>Pimephales promelas</i>) LC50: =1.6mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 0.91 - 2.82mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =1.99mg/L (96h, <i>Pimephales promelas</i>) LC50: =31.0265mg/L (96h, <i>Lepomis macrochirus</i>)	-	LC50: =2.16mg/L (48h, <i>Daphnia magna</i>) EC50: =1.96mg/L (48h, <i>Daphnia magna</i>) EC50: 1.09 - 3.4mg/L (48h, <i>Daphnia magna</i>)

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Propanil	3.07

709-98-8	
Isophorone 78-59-1	1.67
Naphtha (petroleum), heavy aromatic 64742-94-5	6.5
Phosphoric acid 7664-38-2	-0.9
Naphthalene 91-20-3	3.4

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
California Hazardous Waste Status	This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT Not regulated

IATA

UN number or ID number	Not regulated in quantities less than 5 liter per individual container. See IATA SP A197
UN proper shipping name	UN3082
Transport hazard class(es)	Environmentally hazardous substance, liquid, n.o.s.
Packing group	9
IATA Technical Name	III
Special Provisions	Propanil, Bolero (Thiobencarb)
Description	A97, A158, A197
ERG Code	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Propanil, Bolero (Thiobencarb)), 9, III
	9L

IMDG

UN number or ID number	Not regulated in quantities less than 5 liter per individual container. See IMDG 2.10.2.7
UN proper shipping name	UN3082
Transport hazard class(es)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Packing group	9
EmS-No	III
Marine pollutant	F-A, S-F
Marine pollutant	P
Special Provisions	Propanil, Bolero (Thiobencarb)
Description	274, 335, 969
	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Propanil, Bolero (Thiobencarb)), 9, III, Marine pollutant

15. Regulatory information

International Inventories

Contact supplier for inventory compliance status

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 %
Propanil - 709-98-8	1.0
Bolero (Thiobencarb) - 28249-77-6	1.0
Naphthalene - 91-20-3	0.1

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Isophorone 78-59-1	-	X	X	-
Phosphoric acid 7664-38-2	5000 lb	-	-	X
Naphthalene 91-20-3	100 lb	X	X	X

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	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Isophorone 78-59-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Phosphoric acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Naphthalene 91-20-3	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Naphthalene - 91-20-3	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Propanil 709-98-8	X	-	-
Bolero (Thiobencarb) 28249-77-6	X	-	-
Isophorone 78-59-1	X	X	X

1-Hexanol 111-27-3	X	-	X
Naphthalene 91-20-3	X	X	X
Phosphoric acid 7664-38-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number 87290-74

16. Other information

NFPA	Health hazards 2	Flammability 0	Instability 0	Special hazards -
HMIS	Health hazards 2 *	Flammability 0	Physical hazards 0	Personal protection X

Chronic Hazard Star Legend

* = Chronic Health Hazard

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

EPA (Environmental Protection Agency)

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications

Organization for Economic Co-operation and Development High Production Volume Chemicals Program

Organization for Economic Co-operation and Development Screening Information Data Set

World Health Organization

Issuing Date 05-May-2020**Revision Date** 22-Aug-2022**Revision Note** SDS sections updated: 14. Updated format.**Disclaimer**

The information provided in this 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