SAFETY DATA SHEET

Issuing Date 05-May-2020 **Revision Date** 05-May-2020 **Revision Number** 1

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 For professional use only

Details of the supplier of the safety data sheet

Manufacturer Address
Generic Crop Science
1887 Whitney Mesa Drive #9740
Henderson, NV 89014-2069
866-396-0465

E-mail cs@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/protective clothing/eye protection/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. Clean mouth with water and drink afterwards plenty of water. 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.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Dry chemical, CO2, 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 (NOx). Oxides of sulfur. Hydrogen chloride gas.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment 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	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m^3 STEL: 15 ppm STEL: 75 mg/m^3

		(vacated) STEL: 75 mg/m³	

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

Property	Values	Remarks • Method
pH	3.85	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	1.143 g/mL	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	69.6053 cSt @20°C	None known
Dynamic viscosity	No data available	None known

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.

Acute toxicity

Numerical measures of toxicity

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 709-98-8	= 840 mg/kg (Rat)	= 4830 mg/kg (Rabbit)	= 2.8 mg/L (Rat) 4 h
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)	> 2 mL/kg (Rabbit)	> 590 mg/m³ (Rat) 4 h
Phosphoric acid 7664-38-2	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m³ (Rat) 1 h
Naphthalene 91-20-3	= 1110 mg/kg (Rat)	= 1120 mg/kg (Rabbit)	> 340 mg/m³ (Rat) 1 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	-	-	-
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.

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

Persistence and degradability No information available.

Bioaccumulation
Component Information

Chemical name	Partition coefficient
Propanil 709-98-8	3.07
Isophorone 78-59-1	1.66

Naphtha (petroleum), heavy aromatic 64742-94-5	2.9 - 6.1
Naphthalene 91-20-3	3.6

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.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Naphthalene 91-20-3	U165	Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145	-	U165

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Naphthalene 91-20-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	-

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Phosphoric acid 7664-38-2	Corrosive
Naphthalene 91-20-3	Toxic

14. Transport information

DOT Not regulated when shipped domestically, by highway, in individual containers less than

119 gallons (({ 171.4} of 49CFR) .
For packages greater than 119 gallons, use the IMDG shipping description below when shipping internationally, or by vessel.

IATA

UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Transport hazard class(es)	9
Packing group	III
ERG Code	9L
Special Provisions	A97, A158, A197
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Propanil, Bolero (Thiobencarb)), 9, III

IMDG Not regulated

UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es)	9
Packing group	III
EmS-No	F-A, S-F
Marine pollutant	P
Marine pollutant	Propanil, Bolero (Thiobencarb)
Special Provisions	274, 335, 969
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Propanil, Bolero (Thiobencarb)), 9, III, Marine pollutant

15. Regulatory information

International Inventories

TSCA Contact supplier for inventory compliance status.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

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
Isophorone 78-59-1	5000 lb	-
Phosphoric acid 7664-38-2	5000 lb	-
Naphthalene 91-20-3	100 lb	-

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 **Physical and chemical properties** -

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

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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