

SAFETY DATA SHEET

Axill Solutions Clethodim 2EC

1. Identification

Product identifier

Product Name Axill Solutions Clethodim 2EC

Other means of identification

Product Code(s) 93809-5

UN/ID no NA1993

Synonyms Clethodim

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

Axill Solutions 422 Jasmine Way Roseburg, OR97471 (559) 936-0444

E-mail matth@axill-solutions.net

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
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration hazard	Category 1
Flammable liquids	Category 4

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Combustible liquid.
Harmful if swallowed.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.



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

Contaminated work clothing must not be allowed out of the workplace

Use only outdoors or in a well-ventilated area

Keep away from flames and hot surfaces. - No smoking

Keep cool

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

Immediately call a POISON CENTER or doctor IF ON SKIN: Wash with plenty of water and soap

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Do NOT induce vomiting

Rinse mouth

In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish

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. Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

Unknown acute toxicity

4.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Synonyms Clethodim

Chemical name	CAS No	Weight-%	Trade secret
Clethodim	99129-21-2	70-80	*
((E)-(+-)-2-[1-[[(3-Chloro-2-propenyl)oxy]imino]prop			
yl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-			
one			
Naphtha (petroleum), heavy aromatic	64742-94-5	20-30	*
Anionic/Nonionic Detergent Blend	-	1-5	*
Naphthalene	91-20-3	1-5	*

^{*}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. Immediate medical attention is

required. IF exposed or concerned: Get medical advice/attention.

Inhalation Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing

has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical advice/attention. Delayed

pulmonary edema may occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present

and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contactWash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or

allergic reactions see a physician.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical

advice/attention.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s)

involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give

mouth-to-mouth resuscitation. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes. Hives. Difficulty in breathing. Coughing and/ or

wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause

redness and irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically. Because of the

danger of aspiration, emesis or gastric lavage should not be employed unless the risk is

justified by the presence of additional toxic substances.

5. Fire-fighting measures

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the

chemical

Keep product and empty container away from heat and sources of ignition. In the event of

fire, cool tanks with water spray. Product is or contains a sensitizer. May cause

sensitization by skin contact.

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 Yes.

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 Evacuate personnel to safe areas. Use personal protective equipment as required. See

section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure

adequate ventilation. Keep people away from and upwind of spill/leak.

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

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far

ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. 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 Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat,

hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation. 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. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing

and wash before reuse.

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 away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up. Store away from other materials.

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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
Naphthalene	TWA: 10 ppm	TWA: 10 ppm	IDLH: 250 ppm
91-20-3	S*	TWA: 50 mg/m ³	TWA: 10 ppm
		(vacated) TWA: 10 ppm	TWA: 50 mg/m ³
		(vacated) TWA: 50 mg/m ³	STEL: 15 ppm
		(vacated) STEL: 15 ppm	STEL: 75 mg/m ³
		(vacated) STEL: 75 mg/m ³	-

Biological occupational exposure limits

Chemical name	ACGIH
Naphthalene	- (1-Naphthol with hydrolysis plus 2-Naphthol with
91-20-3	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 Tight sealing safety goggles.

Hand protection Wear suitable gloves.

Skin and body protectionWear suitable protective clothing.

Respiratory protectionNo 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. Contaminated work clothing should not

be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. 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

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Appearance Transparent liquid

Physical state Liquid Color Amber

No data available Odor **Odor threshold** No data available

Property Values Remarks • Method

4.35 None known На Melting point / freezing point No data available None known Boiling point / boiling range No data available None known Flash point 60.5 - 60.9 °C / 140.9 - 141.6 °F 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 0.9648 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 4.4855 cSt @20.1°C None known **Dynamic viscosity** No data available None known

Other information

Explosive properties No information available. No information available. **Oxidizing properties** Softening point No information available Molecular weight No information available **VOC Content (%)** No information available **Liquid Density** No information available No information available **Bulk density**

10. Stability and reactivity

None under normal use conditions. Reactivity

Chemical stability Stable under normal conditions.

None under normal processing. Possibility of hazardous reactions

Conditions to avoid Heat, flames and sparks.

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. Aspiration into lungs can

produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness.

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Eye contact Specific test data for the substance or mixture is not available. Causes serious eye

damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. May cause irritation. May

cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Repeated exposure may cause skin dryness or cracking. Causes mild skin 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. Potential for aspiration if

swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Redness. Burning. May cause blindness. Itching. Rashes. Hives. Difficulty in breathing. **Symptoms**

Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact

may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

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

ATEmix (oral) 1,615.70 mg/kg

Unknown acute toxicity

4.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Clethodim	= 1360 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 3.25 mg/L (Rat)4 h
((E)-(+-)-2-[1-[[(3-Chloro-2-prop			
enyl)oxy]imino]propyl]-5-[2-(ethy			
lthio)propyl]-3-hydroxy-2-cycloh			
exen-1-one			
99129-21-2			
Naphtha (petroleum), heavy	> 5000 mg/kg (Rat)	> 2 mL/kg(Rabbit)	> 590 mg/m³ (Rat) 4 h
aromatic			
64742-94-5			
Naphthalene	= 1110 mg/kg (Rat)	= 1120 mg/kg (Rabbit)	> 340 mg/m³(Rat)1 h
91-20-3			

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

Skin corrosion/irritation May cause skin irritation.

Classification based on data available for ingredients. Causes burns. Risk of serious Serious eye damage/eye irritation

damage to eyes.

Classification based on data available for ingredients. May cause sensitization by skin Respiratory or skin sensitization

contact.

No information available. Germ cell mutagenicity

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
Naphthalene	A3	Group 2B	Reasonably	Χ
91-20-3		·	Anticipated	

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 drowsiness or dizziness.

STOT - repeated exposureNo information available.

Target organ effects liver, kidney, Eyes, Skin, Central nervous system, blood.

Aspiration hazard May be fatal if swallowed and enters airways.

Other adverse effects

No information available.

Interactive effects

No information available.

12. Ecological information

Ecotoxicity

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
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

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

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
Γ	Naphthalene	U165	Included in waste	-	U165
	91-20-3		streams: F024, F025,		
			F034, F039, K001, K035,		
			K060, K087, K145		

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
Naphthalene	Toxic
91-20-3	

14. Transport information

DOT Not Regulated when shipped domestically in individual containers less than 119 gallons ({

173.150(f(2)) of 49CFR).

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For packages greater than 119 Gallons:

UN/ID no NA1993

Proper shipping name COMBUSTIBLE LIQUID, N.O.S.

Hazard class Combustible liquid

Packing group

Reportable Quantity (RQ) (Naphthalene: RQ (kg)= 45.40) Naphthalene: RQ (lb)= 100.00

DOT reportable quantity kg Naphthalene: RQ (kg)= 1943.00

(calculated)

DOT Reportable Quantity lbs.

Naphthalene: RQ (lb)= 4280.00

(calculated)

Special Provisions IB3, T1,TP1, 148

DOT Marine Pollutant

Marine pollutant Naphtha (petroleum), heavy aromatic, Naphthalene

Description NA1993, COMBUSTIBLE LIQUID, N.O.S. (Naphthalene), III, Marine pollutant (Naphtha

(petroleum), heavy aromatic, Naphthalene)

Emergency Response Guide

Number

128

IATAIMDGNot regulated

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 %
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
Naphthalene 91-20-3	100 lb	Х	Х	Х

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
Naphthalene	100 lb	-
91-20-3		

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
Naphthalene 91-20-3	X	X	Х
2-Ethylhexanol 104-76-7	-	X	Х
1,2,4 Trimethylbenzene 95-63-6	Х	X	Х

U.S. EPA Label Information

EPA Pesticide Registration Number 87290-11

16. Other information

NFPAHealth hazards3Flammability2Instability0Physical and chemical properties -HMISHealth hazards3 *Flammability2Physical hazards0Personal protectionXChronic Hazard Star Legend* = Chronic Health Hazard* = 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

Revision Date: 05-May-2020

05-May-2020 **Issuing Date**

Revision Date 05-May-2020

Revision Note Initial Release.

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