



SAFETY DATA SHEET

Clethodim 120 EC

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Version 3

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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Clethodim 120 EC

Synonyms Arrow All In
Pure substance/mixture Mixture

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

Recommended Use Herbicide
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address ADAMA Agan Ltd
P.O.B. 262
ASHDOD Israel

For further information, please contact

Email address SDS@ADAMA.COM

Emergency Telephone

Emergency Telephone +972-03-6106666 Subscription no. 36789 (ADAMA Makhteshim Ltd.)

Section 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Aspiration toxicity Category 1 - (H304)
Acute toxicity - Inhalation (Dusts/Mists) Category 4 - (H332)
Serious eye damage/eye irritation Category 2 - (H319)
Carcinogenicity Category 2 - (H351)
Specific target organ toxicity (single exposure) Category 3 - (H336)
Chronic aquatic toxicity Category 2 - (H411)
Flammable liquids Category 4 - (H227)

Label Elements

Hazard pictograms

**Signal word**

Danger

Hazard Statements

H304 - May be fatal if swallowed and enters airways
 H319 - Causes serious eye irritation
 H332 - Harmful if inhaled
 H336 - May cause drowsiness or dizziness
 H351 - Suspected of causing cancer
 H411 - Toxic to aquatic life with long lasting effects
 H227 - Combustible liquid

Precautionary Statements

P102 - Keep out of reach of children
 P201 - Obtain special instructions before use
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P243 - Take precautionary measures against static discharge
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P331 - Do NOT induce vomiting
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
 P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight-%	CAS No	EC No	GHS Classification	M-Factor
Clethodim	11-15	99129-21-2		Acute Tox. 4 (H302) Skin Sens. 1 (H317) Aquatic Chronic 3 (H412)	
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt	1-3	90194-26-6	290-635-1	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 3 (H412)	
2-Ethylhexanol	1-3	104-76-7	203-234-3	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)	
Hydrocarbons, C10, aromatics, >1% naphthalene	35-39	N/A	919-284-0	Asp. Tox. 1 (H304) Carc. 2 (H351) Aquatic Chronic 2 (H411) STOT SE 3 (H336)	
White mineral oil (petroleum)	37 -41	8042-47-5	232-455-8		

Section 4: FIRST AID MEASURES

First aid measures

General advice	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). First aider: Pay attention to self-protection!.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Immediate medical attention is not required.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if necessary.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Immediate medical attention is required.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms None known

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Special hazards arising from the substance or mixture

Combustible material.

Advice for firefighters

In the event of fire, wear self-contained breathing apparatus
In the event of fire and/or explosion do not breathe fumes.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

For emergency responders

Use personal protection recommended in Section 8.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up**Methods for cleaning up**

Take up mechanically, placing in appropriate containers for disposal.

Reference to other sections**Other Information**

See also section 8,13

Section 7: HANDLING AND STORAGE**Precautions for safe handling****Advice on safe handling**

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Specific end use(s)**Risk Management Methods (RMM)**

The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**National occupational exposure limits**

Chemical Name	European Union	United Kingdom	France	Spain	Germany
2-Ethylhexanol 104-76-7					TWA: 10 ppm TWA: 54 mg/m ³ Ceiling / Peak: 10 ppm Ceiling / Peak: 54 mg/m ³ TWA: 20 ppm TWA: 110 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
2-Ethylhexanol 104-76-7	Skin STEL 100 ppm STEL 540 mg/m ³ TWA: 50 ppm TWA: 270 mg/m ³	STEL: 20 ppm STEL: 110 mg/m ³ TWA: 20 ppm TWA: 110 mg/m ³	STEL: 320 mg/m ³ TWA: 160 mg/m ³		

Exposure controls**Engineering Controls**

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Hand Protection	Gloves made of plastic or rubber.
Body Protection	Rubber boots, Apron, Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	Use only with adequate ventilation.
General Hygiene Considerations	When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.
Environmental exposure controls	Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Physical and Chemical Properties**

<u>Property</u>	<u>Values</u>	<u>Method</u>	<u>Remarks</u>
Appearance			
Physical state	: Liquid		
Color	: Amber		
Odor	: Aromatic		
Odor threshold	: No data available		
pH	: 3 - 6		
Melting point/freezing point °C	: ----		Not Applicable
Boiling point/boiling range °C	: ----		Not Applicable
Flash point °C	: 66.6	CIPAC MT 12.2	
Evaporation rate	: Not Applicable		
Flammability (solid, gas)	: Not applicable for liquids		
Upper/lower flammability or explosive limits	: No data available		
Vapor pressure kPa	: ----		Not Applicable
Vapor density	: No data available		
Relative density	: 0.9 - 0.93	CIPAC MT 3.1	
Solubility(ies) mg/l	: ----		Not Applicable
Partition Coefficient (n-octanol/water) Log Pow	:		See Section 12 for more information
Autoignition temperature °C	: ----		No data available
Decomposition temperature °C	: ----		No data available
Kinematic viscosity mm ² /s 40 °C	: 5.189		
Explosive properties	: No data available		
Oxidizing properties	: No data available		No data available
Other Information			
Bulk density g/ml	: ----		Not Applicable
Surface tension mN/m	: ----		No data available

Section 10: STABILITY AND REACTIVITY**Reactivity**

Not available.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat, flames and sparks.

Incompatible Materials

No information available

Hazardous Decomposition Products

None under normal use conditions.

Section 11: TOXICOLOGY INFORMATION

Information on toxicological effects

Acute toxicity

	<u>Values</u>	<u>Species</u>	<u>Method</u>	<u>Remarks</u>
Oral LD50 mg/kg	: > 2000	Rat	OECD 423	
Dermal LD50 mg/kg	: > 2000	Rat	OECD 402	
Inhalation LC50 mg/l/4h	: 4.01	Rat	OECD 403	
Skin corrosion/irritation	: Non-irritating to the skin	Rabbit	OECD 404	
Serious eye damage/eye irritation	: Irritating to eyes	Rabbit	OECD 405	
Respiratory/skin sensitization	: Not a skin sensitizer	Guinea pig	OECD 406	

Chronic toxicity

Germ cell mutagenicity

Chemical Name
Clethodim : No data available

Carcinogenicity

Chemical Name
Clethodim : Not Carcinogenic

Reproductive toxicity

Chemical Name
Clethodim : Not toxic for the reproductive system

STOT - single exposure

Chemical Name
Clethodim : No data available

STOT - repeated exposure

Chemical Name
Clethodim : No data available

Aspiration hazard

Chemical Name
Clethodim : No data available

Section 12: ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity

Acute toxicity	Values	Species	Method	Remarks
Fish 96-hour LC50 mg/l	: > 100	Poecilia reticulata		
Crustacea 48-hour EC50 mg/l	: ----			No data available
Algae 72-hour EC50 mg/l	: ----			No data available
Other plants EC50 mg/l	: ----			No data available

Terrestrial Toxicity

Birds Oral LD50 mg/kg

Chemical Name

Clethodim : > 2000 Japanese quail EPA-OPPTS 850.2100

Bees Oral LD50 µg/bee

Chemical Name

Clethodim : 313.4 OECD 213

Persistence and degradability

Abiotic Degradation

Water DT50 days

Chemical Name

Clethodim : 300 pH 7

Soil DT50 days

Chemical Name

Clethodim : 1 - 3

Biodegradation

Chemical Name

Clethodim : No data available

Bioaccumulative potential

Partition Coefficient

(n-octanol/water) Partition Coefficient (n-octanol/water) Log Pow

Chemical Name

Clethodim : 4.4 OECD 107

Bioconcentration factor (BCF)

Chemical Name

Clethodim : ---- No data available

Mobility in soil

Adsorption/Desorption

Chemical Name

Clethodim : 1.08-93 ml/g Koc

Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB

Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Improper disposal or reuse of this container may be dangerous and illegal.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORTATION INFORMATION

IMDG/IMO	
UN/ID No *	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C10, aromatics, > 1% naphthalene)
Hazard Class	9
Packing Group	III
Marine pollutant	Yes
Special precautions for user	

RID/ADR	
UN/ID No *	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C10, aromatics, > 1% naphthalene)
Hazard Class	9
Packing Group	III
Environmental hazard	Yes
Special precautions for user	

ICAO/IATA	
UN/ID No *	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Hydrocarbons, C10, aromatics, > 1% naphthalene)
Hazard Class	9
Packing Group	III
Environmental hazard	Yes
Special precautions for user	
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not Applicable



* Note: UN3077 & UN3082 – These products may be transported as non-dangerous goods under the special provisions of IMDG Code 2.10.2.7; ADR SP375 and ICAO/IATA A197 when packed in single or inner packaging of up to 5L for liquids or 5 kg or less for solids.

Section 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Section 16: OTHER INFORMATION

Revision Note

Changes made to the last version are labeled with this sign ***.

List of Acronyms

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CAS Number - Chemical Abstracts Service number
EC Number - EINECS and ELINCS Number
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
OECD - Organization for Economic Co-operation and Development
PBT - Persistent, Bioaccumulative and Toxic substance
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT - Specific Target Organ Toxicity
vPvB - Very Persistent and Very Bioaccumulative

Disclaimer

The information provided in this Material 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