

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
 Product name : NEXTSTEP™ NG Herbicide
 Other means of identification : EPA Reg. No. 100-1173-66330

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

Use of the substance/mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Arysta LifeScience North America LLC
 15401 Weston Parkway, Suite 150
 Cary, NC 27513 – USA

1.4. Emergency telephone number

Emergency number : Exposure Calls (PROSAR): +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

Flam. Liq. 4 H227
 STOT SE 3 H335
 STOT SE 3 H336
 STOT RE 2 H373
 Asp. Tox. 1 H304

Full text of 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) :

H227 - Combustible liquid
 H304 - May be fatal if swallowed and enters airways
 H335 - May cause respiratory irritation
 H336 - May cause drowsiness or dizziness
 H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
 P260 - Do not breathe the mist, vapours
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear protective clothing, protective gloves
 P301+P310 - If swallowed: Immediately call a poison center/doctor/...
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
 P312 - Call a poison center/doctor/... if you feel unwell
 P314 - Get medical advice/attention if you feel unwell
 P331 - Do NOT induce vomiting
 P370+P378 - In case of fire: Use carbon dioxide (CO2), dry extinguishing powder, foam to extinguish
 P403+P233 - Store in a well-ventilated place. Keep container tightly closed
 P403+P235 - Store in a well-ventilated place. Keep cool
 P405 - Store locked up
 P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards

No additional information available

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2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Exact concentrations are withheld as trade secret.

Name	Product identifier	%	GHS-US classification
Acetate ester	(CAS No) trade secret	> 20	Eye Irrit. 2B, H320 STOT SE 3, H336 STOT SE 3, H335 Asp. Tox. 1, H304
Acetophenone	(CAS No) 98-86-2	< 10	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 STOT SE 3, H335
clodiafop-propargyl (Main constituent)	(CAS No) 105512-06-9	1 – 10	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Cloquintocet-mexyl (Main constituent)	(CAS No) 99607-70-2	< 5	Acute Tox. 3 (Inhalation), H331 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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. Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Gently wash with plenty of soap and water.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water.
First-aid measures after ingestion	: Do NOT induce vomiting unless directed to do so by medical personnel. Get immediate medical advice/attention. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries	: May cause damage to organs through prolonged or repeated exposure.
Symptoms/injuries after inhalation	: May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. Dry chemical. Foam.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Combustible liquid. Burning produces irritating, toxic and noxious fumes.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
Reactivity	: No dangerous reactions known.

5.3. Advice for firefighters

Precautionary measures fire	: Stop leak if safe to do so.
Firefighting instructions	: Do not allow run-off from fire fighting to enter drains or water courses. Dike and collect water used to fight the fire.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus. Wear fire/flammable resistant/retardant clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable gloves. In case of inadequate ventilation wear respiratory protection.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable gloves. In case of inadequate ventilation wear respiratory protection.
Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Do not allow minor leaks or spills to accumulate on walking surfaces. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up : Absorb and/or contain spill with inert material, then place in suitable container.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Keep away from Sources of ignition. - No smoking.
Precautions for safe handling : No open flames. No smoking. Avoid all eye and skin contact and do not breathe vapour and mist. Use only outdoors or in a well-ventilated area.
Hygiene measures : Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.
Storage conditions : Keep in fireproof place. Do not store near food, foodstuffs, drugs, or potable water supplies. Store locked up. Keep container tightly closed.
Heat and ignition sources : Keep away from heat, sparks and flame.
Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Herbicide.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

NEXTSTEP™ NG Herbicide		
ACGIH	Not applicable	
OSHA	Not applicable	
Cloquintocet-mexyl (99607-70-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
clodiafop-propargyl (105512-06-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
Acetophenone (98-86-2)		
ACGIH	ACGIH TWA (mg/m ³)	49 mg/m ³
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	URT irr; CNS impair; pregnancy loss

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Acetophenone (98-86-2)

OSHA	Not applicable
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Acetate ester

ACGIH	Not applicable
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OSHA	Not applicable
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8.2. Exposure controls

Appropriate engineering controls	: Avoid creating mist or spray. Avoid splashing. Use only outdoors or in a well-ventilated area.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear suitable gloves. Butyl rubber gloves. nitrile rubber gloves. neoprene gloves. PVC.
Eye protection	: In case of splashing or aerosol production: protective goggles.
Skin and body protection	: Foot protection. Long sleeved protective clothing.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.
Other information	: Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Light brown to dark brown
Odour	: Solvent
Odour threshold	: No data available
pH	: 4 - 7 (1% aqueous solution)
Melting point	: -31 °C
Freezing point	: -31 °C
Boiling point	: 177 - 210 °C
Flash point	: 62 °C (CC)
Relative evaporation rate (butyl acetate=1)	: 0.03
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	: 1.06 - 1.1 g/ml
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: 510 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 26.3 cP @ 21 °C

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Combustible liquid. May form flammable/explosive vapour-air mixture.

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10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

May release flammable gases. Burning produces irritating, toxic and noxious fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact.

Acute toxicity : Not classified

NEXTSTEP™ NG Herbicide	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 5.57 mg/l/4h

Cloquintocet-mexyl (99607-70-2)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 0.935 mg/l/4h
ATE US (gases)	700.000 ppmv/4h
ATE US (vapours)	3.000 mg/l/4h
ATE US (dust,mist)	0.500 mg/l/4h

clodiafop-propargyl (105512-06-9)	
ATE US (oral)	500.000 mg/kg bodyweight

Acetophenone (98-86-2)	
LD50 oral rat	2081 mg/kg
LD50 dermal rat	3300 mg/kg
ATE US (oral)	2081.000 mg/kg bodyweight
ATE US (dermal)	3300.000 mg/kg bodyweight

Skin corrosion/irritation	: Not classified (Slightly irritating to skin)
Serious eye damage/irritation	: Not classified. (Slightly irritant but not relevant for classification)
Respiratory or skin sensitisation	: Not classified. (No sensitizing reaction was observed for guinea pigs)
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified increased incidences of benign tumors in mice (liver) and rats (ovary, prostate) (Technical)
Reproductive toxicity	: Not classified None observed (technical)
Specific target organ toxicity (single exposure)	: May cause respiratory irritation. May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: May be fatal if swallowed and enters airways.
Symptoms/injuries after inhalation	: May cause respiratory irritation. May cause drowsiness or dizziness.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity

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

Cloquintocet-mexyl (99607-70-2)	
LC50 fish 1	> 0.97 ppm 96 h Rainbow trout
EC50 Daphnia 1	> 0.82 ppm 48 h

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NOEC (acute)	3.74 mg/l
clodiafop-propargyl (105512-06-9)	
LC50 fish 1	0.39 ppm 96 h Trout
EC50 Daphnia 1	2 ppm 48 h
LC50 fish 2	0.21 ppm 96 h Trout
NOEC (chronic)	0.23 mg/l 21 day Daphnia
NOEC chronic fish	0.15 mg/l 21 day Trout
Acetophenone (98-86-2)	
LC50 fish 1	162 mg/kg 96 h

12.2. Persistence and degradability

NEXTSTEP™ NG Herbicide	
Persistence and degradability	May cause long-term adverse effects in the environment.
Cloquintocet-mexyl (99607-70-2)	
Persistence and degradability	Not readily biodegradable.
clodiafop-propargyl (105512-06-9)	
Persistence and degradability	Readily biodegradable. Not expected to persist.

12.3. Bioaccumulative potential

Cloquintocet-mexyl (99607-70-2)	
Bioconcentration factor (BCF REACH)	877
clodiafop-propargyl (105512-06-9)	
Bioaccumulative potential	Not expected to bioaccumulate.

12.4. Mobility in soil

clodiafop-propargyl (105512-06-9)	
Ecology - soil	Slightly mobile in soil.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Do not dispose in household garbage.
Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Non bulk (< 119 gallons) Not hazardous for transport

Bulk (>= 119 gallons):

Transport document description : NA1993 Compounds, weed killing, liquid (Acetophenone), 3, III

UN-No.(DOT) : NA1993

Proper Shipping Name (DOT) : Compounds, weed killing, liquid
Acetophenone

Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



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Packing group (DOT) : III - Minor Danger

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Clodinafop-Propargyl, Cloquintocet-Mexyl), 9, III, (E)

Packing group (ADR) : III
Class (ADR) : 9 - Miscellaneous dangerous substances and articles
Hazard identification number (Kemler No.) : 90
Classification code (ADR) : M6
Danger labels (ADR) : 9 - Miscellaneous dangerous substances and articles



Orange plates :

Tunnel restriction code (ADR) : E
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1

Transport by sea

UN-No. (IMDG) : 3082
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Clodinafop-Propargyl, Cloquintocet-Mexyl)
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG) : III - substances presenting low danger
Marine Pollutant : Yes



Air transport

UN-No. (IATA) : 3082
Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s. (Clodinafop-Propargyl, Cloquintocet-Mexyl)
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger
Marine Pollutant : Yes



SECTION 15: Regulatory information

15.1. US Federal regulations

Cloquintocet-mexyl (99607-70-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

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Acetophenone (98-86-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb
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15.2. International regulations

CANADA

Cloquintocet-mexyl (99607-70-2)

Not listed on the Canadian DSL (Domestic Substances List) inventory.

Acetophenone (98-86-2)

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

EU-Regulations

Cloquintocet-mexyl (99607-70-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Acetophenone (98-86-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

STOT SE 3 H335

STOT SE 3 H336

Aquatic Chronic 2 H411

Full text of H-statements: see section 16

National regulations

Cloquintocet-mexyl (99607-70-2)

Not listed on the Canadian Non-Domestic Substances List (NDSL).

15.3. US State regulations

Acetophenone (98-86-2)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

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

15.4. US EPA – FIFRA Regulations

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.

Signal word (FIFRA)	: Caution.
Hazard statements (FIFRA)	: Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing.
Environmental hazards (FIFRA)	: Do not apply directly to water, 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 wash water or rinsate.
Physical or chemical hazards (FIFRA)	: Do not use or store near heat or open flame.

SECTION 16: Other information

Indication of changes	: GHS classification information.
Revision date	: 06/29/2015
Data sources	: European Chemicals Agency (ECHA) Registered Substances list. Accessed at http://echa.europa.eu/ . Kristen Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html .

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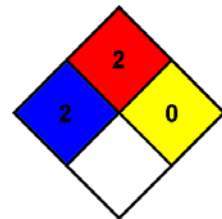
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Abbreviations and acronyms	: ACGIH (American Conference of Government Industrial Hygienists). ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number. CLP: Classification, Labelling, Packaging. EC50: Environmental Concentration associated with a response by 50% of the test population. GHS-US: 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 Weight Average.
Other information	: None.

Full text of H-statements:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
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 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
Flam. Liq. 4	Flammable liquids, Category 4
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H227	Combustible liquid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H320	Causes eye irritation
H331	Toxic if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 2 - Must be moderately heated or exposed to relatively high temperature before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Redstone SDS USCAN (GHS) for Arysta

SDS Prepared by: The Redstone Group, LLC.
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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