

CALLISTO 480SC HERBICIDE

Version 1.0 Revision Date: 05/16/2019 SDS Number: S00057223772 This version replaces all previous versions.

SECTION 1. IDENTIFICATION

Product name : CALLISTO 480SC HERBICIDE
Design code : A12738A
Product Registration number : 27833
Other means of identification : No data available

Manufacturer or supplier's details

Company name of supplier : Syngenta Canada Inc.
Address : 140 Research Lane, Research Park
Guelph ON N1G 4Z3
Canada
Telephone : 1-87-SYNGENTA (1-877-964-3682)
Telefax : 1-519-823-0504
Emergency telephone number : 1-800-327-8633 (FAST MED)

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the Hazardous Products Regulations**

Specific target organ toxicity : Category 2 (Kidney)
- repeated exposure

GHS label elements

Hazard pictograms :



Signal word : Warning
Hazard statements : H373 May cause damage to organs (Kidney) through prolonged or repeated exposure.
Precautionary statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Response:
P314 Get medical advice/ attention if you feel unwell.

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Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
mesotrione(ISO)	104206-82-8	40.3361
ethanediol	107-21-1	>= 10 - < 30

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.
- Most important symptoms and effects, both acute and delayed : Nonspecific
No symptoms known or expected.
- Notes to physician : There is no specific antidote available.
Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Extinguishing media - small fires

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- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during fire-fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.
- Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.
- Conditions for safe storage : No special storage conditions required.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep out of the reach of children.
Keep away from food, drink and animal feedingstuffs.

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Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
mesotrione(ISO)	104206-82-8	TWA	5 mg/m ³	Syngenta
ethanediol	107-21-1	(c)	100 mg/m ³	CA AB OEL
		TWA (particulate)	10 mg/m ³	CA BC OEL
		STEL (particulate)	20 mg/m ³	CA BC OEL
		C (aerosol)	100 mg/m ³	CA BC OEL
		C (Vapour)	50 ppm	CA BC OEL
		C (Vapour and mist)	50 ppm 127 mg/m ³	CA QC OEL
		TWA (Vapour)	25 ppm	ACGIH
		STEL (Vapour)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m ³	ACGIH

Engineering measures : THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

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Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection
- Remarks : No special protective equipment required.
- Eye protection : No special protective equipment required.
- Skin and body protection : No special protective equipment required.
Select skin and body protection based on the physical job requirements.
- Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : dispersion
- Colour : beige to brown
- Odour : Faint pleasant
- Odour Threshold : No data available
- pH : 1 - 5 (25 °C)
Concentration: 1 % w/v
2.4 - 2.8 (20 °C)
Concentration: 100 % w/v
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Flash point : Method: Pensky-Martens closed cup
does not flash
- Evaporation rate : No data available
- Flammability (solid, gas) : The product is not flammable.
- Upper explosion limit / Upper flammability limit : No data available

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Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1.19 g/cm ³ (25 °C)
Solubility(ies)		
Solubility in other solvents	:	Miscible Solvent: Water
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	405 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	2,760 mPa.s (20 °C) 2,110 mPa.s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Surface tension	:	44.6 mN/m, 20 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	No decomposition if used as directed.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Ingestion
Inhalation

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Skin contact

Eye contact

Acute toxicity

Product:

- Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male and female): > 5.19 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

Components:

mesotrione(ISO):

- Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male and female): > 5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Assessment: The substance or mixture has no acute inhalation toxicity
- Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
 Assessment: The substance or mixture has no acute dermal toxicity

ethanediol:

- Acute oral toxicity : LD50 (Rat): 4,700 mg/kg
- Acute toxicity estimate (Humans): 786 mg/kg
 Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation

Product:

- Species : Rabbit
- Result : No skin irritation

Components:

mesotrione(ISO):

- Species : Rabbit
- Result : No skin irritation

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Serious eye damage/eye irritation**Product:**

Species : Rabbit
Result : No eye irritation

Components:**mesotrione(ISO):**

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation**Product:**

Test Type : Buehler Test
Species : Guinea pig
Result : Did not cause sensitisation on laboratory animals.

Components:**mesotrione(ISO):**

Test Type : Maximisation Test
Species : Guinea pig
Result : Does not cause skin sensitisation.

Germ cell mutagenicity**Components:****mesotrione(ISO):**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity**Components:****mesotrione(ISO):**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Reproductive toxicity**Components:****mesotrione(ISO):**

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.

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STOT - repeated exposure**Components:****ethanediol:**

Target Organs : Kidney
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity**Components:****mesotrione(ISO):**

Remarks : No adverse effect has been observed in chronic toxicity tests.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 180 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 180 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 26 mg/l
Exposure time: 72 h

EC50 (Lemna gibba (gibbous duckweed)): 12 µg/l
End point: Frond growth
Exposure time: 14 d

NOEC (Lemna gibba (gibbous duckweed)): 2.5 µg/l
End point: Frond growth
Exposure time: 14 d

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Components:**mesotrione(ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l
Exposure time: 96 h

LC50 (Cyprinus carpio (Carp)): > 97.1 mg/l
Exposure time: 96 h

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- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 900 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.87 mg/l
Exposure time: 72 h
- NOEC (Pseudokirchneriella subcapitata (green algae)): 0.18 mg/l
End point: Growth rate
Exposure time: 72 h
- EC50 (Lemna gibba (gibbous duckweed)): 0.022 mg/l
Exposure time: 14 d
- NOEC (Lemna gibba (gibbous duckweed)): 0.008 mg/l
Exposure time: 14 d
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 12.5 mg/l
Exposure time: 36 d
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 180 mg/l
Exposure time: 21 d
- M-Factor (Chronic aquatic toxicity) : 10

ethanediol:

- Toxicity to microorganisms : EC50 (Pseudomonas putida): > 10,000 mg/l
Exposure time: 16 h

Persistence and degradability

Components:

mesotrione(ISO):

- Stability in water : Degradation half life: > 30 d (25 °C)
Remarks: Persistent in water.

Bioaccumulative potential

Components:

mesotrione(ISO):

- Bioaccumulation : Remarks: Low bioaccumulation potential.

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Mobility in soil

Components:

mesotrione(ISO):

Distribution among environmental compartments : Remarks: Mesotrione has medium to high mobility in soil.

Stability in soil : Dissipation time: 6 - 105 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

Other adverse effects

Components:

mesotrione(ISO):

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

ethanediol:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Refer to the product label for specific disposal/recycling information

Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Refer to the product label for specific disposal/recycling information

Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

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UNRTDG

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE)
 Class : 9
 Packing group : III
 Labels : 9

IATA-DGR

UN/ID No. : UN 3082
 Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (MESOTRIONE)
 Class : 9
 Packing group : III
 Labels : Miscellaneous
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964
 Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE)
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

TDG

UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE)
 Class : 9
 Packing group : III
 Labels : 9
 ERG Code : 171
 Marine pollutant : yes(MESOTRIONE)

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

Warning, contains the allergen 1,2-benzisothiazolin-3-one

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label: Read the label, authorised under the Pest Control Products Act, prior to using or handling the pest control product

There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

Caution

Eye irritant

Potential skin sensitiser

NPRI Components : ethanediol

The components of this product are reported in the following inventories:

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

mesotrione(ISO)

2-methyl-, polymer with oxirane, 1,2-ethanediylbis(nitrilodialkylene) ether

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
 CA BC OEL : Canada. British Columbia OEL
 CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
 ACGIH / TWA : 8-hour, time-weighted average
 ACGIH / STEL : Short-term exposure limit
 CA AB OEL / (c) : ceiling occupational exposure limit
 CA BC OEL / TWA : 8-hour time weighted average
 CA BC OEL / STEL : short-term exposure limit
 CA BC OEL / C : ceiling limit
 CA QC OEL / C : Ceiling

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada);

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ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 05/16/2019

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.

CA / EN