

Product Name: Apache™ Herbicide**Issue Date:** 31.10.2019

Dow AgroSciences* (NZ) Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. Product and Company Identification

Product Name: Apache™ herbicide**Purpose:** End-use herbicide**COMPANY IDENTIFICATION**

DOW AGROSCIENCES* (NZ) LIMITED
89 PARITUTU ROAD
4342 NEW PLYMOUTH
NEW ZEALAND

Customer Information Number:

0800-803-939

NZCustomerservice@corteva.com**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:** +64 6 751 2407**Local Emergency Contact:** 0800 844 455**For medical advice, contact the New Zealand Poisons Information Centre:**

0800 POISON (0800 764 766)

Transport Emergency Only Dial: 111

This SDS may not provide exhaustive guidance for all the HSNO controls assigned to this substance. The NZ EPA website www.epa.govt.nz should be consulted for a full list of triggered controls and cited regulations

2. Hazards Identification

Hazard classification: NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION:

Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. Refer to Section 15 for HSNO Approval Number.

HSNO Classification: 6.3B, 9.1A, 9.2A.Signal word: **WARNING!****Hazard statements:**

Causes mild skin irritation

Very toxic to aquatic life with long lasting effects

Very toxic to the soil environment

Prevention:

Avoid release to the environment

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Response:

Collect spillage

If skin irritation occurs: Get medical advice/attention

Disposal

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

3. Composition Information

Component	CAS #	Amount
Aminopyralid Potassium	566191-87-5	44.4 %
Metsulfuron-methyl	74223-64-6	30.0 %
Kaolin	1332-58-7	< 7.0 %
Carbonic acid disodium salt (8 Cl, 9Cl)	497-19-8	5.0 %
Titanium dioxide	13463-67-7	<1.0 %
Balance	Not available	> 12.6 %

4. First Aid Procedures

Consult the National Poisons Information Centre (0800 POISON (0800 764 766) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

Eye Contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Skin contact may aggravate pre-existing dermatitis.

5. Fire Fighting Measures

HAZCHEM: 2X

Suitable extinguishing media

Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents. Move container from fire area if this is possible without hazard. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

See Section 9 for related Physical Properties

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7: Handling, for additional precautionary measures. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information refer to Section 8: Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12: Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Corteva Agriscience for clean-up assistance. See Section 13: Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep out of reach of children. Good housekeeping and controlling of dusts are necessary for safe handling of product. Do not swallow. Avoid breathing dust or mist. Avoid contact

with eyes, skin, and clothing. Wash thoroughly after handling. Use with adequate ventilation. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100 litres or more, either alone or in aggregate with other hazardous substances. See Hazardous substances Emergency Management and Identification Regulations.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Carbonic acid disodium salt (8 CI, 9CI)	Dow IHG	TWA	10 mg/m ³
Kaolin	NZ OEL	TWA Inspirable dust.	10 mg/m ³
	NZ OEL	TWA Respirable dust.	2 mg/m ³
Titanium dioxide	NZ OEL	TWA	10 mg/m ³

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields).

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use chemical resistant gloves classified under standard AS/NZS 2161.10:

Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Other Information

Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:

AS/NZS 1336: Eye and face protection - Guidelines.
 AS/NZS 1337: Eye protectors for industrial applications.
 AS/NZS 1715: Selection, use and maintenance of respiratory protective devices.
 AS/NZS 2161: Occupational protective gloves.
 AS/NZS 2210: Occupational protective footwear.
 AS/NZS 4501: Occupational protective clothing.

9. Physical and Chemical Properties

Appearance	
Physical State	Granules.
Colour	Brown
Odour	Mild
Odour Threshold	No test data available
pH	7.34 (@ 1 %) <i>pH Electrode</i>
Melting Point	No test data available
Freezing Point	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Vapour Pressure	Not applicable
Vapour Density (air = 1)	Not applicable
Specific Gravity (H₂O = 1)	No test data available
Solubility in water (by weight)	No test data available
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	Not applicable
Decomposition Temperature	No test data available
Bulk Density	520 kg/m ³ @ 23.3 °C

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at recommended temperatures and pressures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to Avoid: Product decomposes above melting temperature. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

11. Toxicological Information

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: LD50, rat, female > 5,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: LD50, rat, male and female > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

As product: LC50, 4 h, Dust, rat, male and female > 5.12 mg/l. No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Eye damage/eye irritation

May cause slight eye irritation. Corneal injury is unlikely.

Sensitization

Skin: Did not demonstrate the potential for contact allergy in mice.

Respiratory: No relevant data found.

Chronic Toxicity and Carcinogenicity

For the active ingredient(s): Did not cause cancer in laboratory animals.

Developmental Toxicity

For the active ingredient(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity

For the active ingredient(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology

In vitro genetic toxicity studies were negative.

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

12. Ecological Information

Ecotoxicity

Fish Acute & Prolonged Toxicity

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, *Oncorhynchus mykiss* (rainbow trout), semi-static test, 96 h: > 120 mg/l

Aquatic Invertebrate Acute Toxicity

Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 > 100 mg/L).

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization > 100 mg/l

Aquatic Plant Toxicity

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, Growth rate inhibition, 72 h: 1.49 mg/l

Toxicity to Above Ground Organisms

LC50, *Colinus virginianus* (Bobwhite quail): > 2,250 mg/kg
oral LD50, *Apis mellifera* (bees): > 214 micrograms/bee
contact LD50, *Apis mellifera* (bees): > 200 micrograms/bee

Persistence and Degradability

Aminopyralid Potassium

For similar active ingredient(s). Aminopyralid. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Metsulfuron-methyl

No appreciable biodegradation is expected.

Kaolin

Biodegradation is not applicable.

Carbonic acid disodium salt (8 CI, 9CI)

Biodegradation is not applicable.

Titanium dioxide

Biodegradation is not applicable.

Bioaccumulative potential

Aminopyralid Potassium

Bioaccumulation: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Metsulfuron-methyl

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 0.18

Kaolin

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Carbonic acid disodium salt (8 CI, 9CI)

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Titanium dioxide

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

Mobility in soil

Aminopyralid Potassium

Mobility in soil: For similar active ingredient(s). Aminopyralid., Potential for mobility in soil is very high (Koc between 0 and 50).

Metsulfuron-methyl

Mobility in soil: No data available.

Kaolin

Mobility in soil: No relevant data found.

Carbonic acid disodium salt (8 Cl, 9Cl)

Mobility in soil: Relevant data not available.

Titanium dioxide

Mobility in soil: No data available.

13. Disposal Considerations

Disposal methods

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Regulations 2001. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.

14. Transport Information

PUBLIC PASSENGER VEHICLE TRANSPORT: To be transported ONLY in the sealed original container. Do not transport in a passenger service vehicle

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Metsulfuron-methyl)
UN number	UN 3077
Class	9
Packing group	III
Environmental hazards	Metsulfuron-methyl

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Metsulfuron-methyl)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Metsulfuron-methyl
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S. (Metsulfuron-methyl)
UN number	UN 3077
Class	9
Packing group	III

Hazchem code: 2X

Matters needing attention for transportation

Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code and IATA special provision A197. If the product meets these special provisions, it may be shipped in New Zealand as a non-dangerous goods under provisions in NZS 5433 code which accepts IMDG and IATA classification.

This information is not intended to convey all specific regulatory or operational requirements/ information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

ACVMG APPROVAL NUMBER: P8731

NZ EPA New Zealand Approval Code: HSR100843

ADVICE TO PRODUCT USERS REGARDING HSNO CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority publication; User Guide to the HSNO Controls Regulations. <http://www.epa.govt.nz>

16. Other Information

Revision

Identification Number: 101218426 / A157 / Issue Date: 31.10.2019 / Version: Replaces 07.10.2015

DAS Code: GF-2361

Sections amended: 1, 2, 14, 16

Legend

W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level

Full text of other abbreviations

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; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; KECl - 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

Dow AgroSciences* (NZ) Ltd urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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