



## Section 1 - Identification of The Material and Supplier

**Adama Australia Pty Ltd,**  
Suite 1, Level 4, Building B  
207 Pacific Highway St Leonards, NSW 2065  
ACN 050 328 973

Telephone (02)9431 7800 (24 hours)  
Fax (02)9431 7700

**Chemical nature:** Active ingredient is a fluorinated triazole derivative.  
**Trade Name:** **Artillery Herbicide**  
**Product Use:** Agricultural herbicide for use as described on the product label.  
**Creation Date:** **February, 2013**  
**This version issued:** **September, 2015** and is valid for 5 years from this date.

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: N, Dangerous to the environment. Not classified as hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** R51. Toxic to aquatic organisms.

**Safety Phrases:** S22, S36, S24/25. Do not breathe dust. Wear suitable protective clothing. Avoid contact with skin and eyes.

**SUSMP Classification:** None allocated.

**ADG Classification:** None allocated. Not a Dangerous Good under the ADG Code.

**UN Number:** None allocated



**GHS Signal word: NONE. Not hazardous.**

### HAZARD STATEMENT:

H401: Toxic to aquatic life.

### PREVENTION

P261: Avoid breathing dusts.

### RESPONSE

P337: If eye irritation persists: seek medical attention.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P332+P313: If skin irritation occurs: Get medical advice.

P391: Collect spillage.

P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

### STORAGE

P411+P235: Store at temperatures not exceeding 30°C. Keep cool.

### DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

## Emergency Overview

**Physical Description & colour:** Brown granulated solid.

**Odour:** Musty odour.

**Major Health Hazards:** no significant risk factors have been found for this product.

## Potential Health Effects

**Inhalation:**

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**Short term exposure:** Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

**Long Term exposure:** No data for health effects associated with long term inhalation.

**Skin Contact:**

**Short term exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.

**Long Term exposure:** No data for health effects associated with long term skin exposure.

**Eye Contact:**

**Short term exposure:** This product is likely to be mechanically irritating. If exposure is minor or brief, no long term effects should result. However, if material is not removed promptly, scratches to surface of the eye may result with long term consequences.

**Long Term exposure:** No data for health effects associated with long term eye exposure.

**Ingestion:**

**Short term exposure:** Significant oral exposure is considered to be unlikely. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

**Long Term exposure:** No data for health effects associated with long term ingestion.

**Carcinogen Status:**

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** No significant ingredient is classified as carcinogenic by IARC.

### Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Carfentrazone ethyl ester	128639-02-1	400g/kg	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

### Section 4 - First Aid Measures

**General Information:**

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Gently brush away excess particles. Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

**Eye Contact:** Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the particles are removed, while holding the eyelid(s) open. Obtain medical attention if irritation persists, or if particles are lodged in surface of the eye(s). Take special care if exposed person is wearing contact lenses.

**Ingestion:** If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

### Section 5 - Fire Fighting Measures

**Fire and Explosion Hazards:** The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is little risk of an explosion from this product if commercial quantities are involved in a fire. This product, if scattered, may form flammable or explosive dust clouds in air.

Fire decomposition products from this product are likely to be toxic and corrosive if inhaled. Take appropriate protective measures.

**Extinguishing Media:** In case of fire, use carbon dioxide, dry chemical, foam, water fog.

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**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. Do not scatter spilled material with high pressure water jets.

**Flash point:** Combustible solid.

**Upper Flammability Limit:** No data.

**Lower Flammability Limit:** No data.

**Autoignition temperature:** No data.

**Flammability Class:** Combustible solid.

## Section 6 - Accidental Release Measures

**Accidental release:** Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include cotton, rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable Dust Mask. Use a P1 mask, designed for use against mechanically generated particles e.g. silica & asbestos.

Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## Section 7 - Handling and Storage

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

## Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

### SWA Exposure Limits

### TWA (mg/m<sup>3</sup>)

### STEL (mg/m<sup>3</sup>)

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Carfentrazone ethyl ester is set at 0.03mg/kg/day. The corresponding NOEL is set at 3mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, Sept 2011.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

**Eye Protection:** Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

**Skin Protection:** The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when skin contact is likely.

**Protective Material Types:** We suggest that protective clothing be made from the following materials: cotton, rubber, PVC.

**Respirator:** If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

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## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Off-white to light brown granulated solid.
<b>Odour:</b>	Musty odour.
<b>Boiling Point:</b>	Not available.
<b>Freezing/Melting Point:</b>	No specific data. Solid at normal temperatures.
<b>Volatiles:</b>	No specific data. Expected to be low at 100°C.
<b>Vapour Pressure:</b>	Negligible at normal ambient temperatures.
<b>Vapour Density:</b>	Not applicable.
<b>Specific Gravity:</b>	No data. Bulk density 0.49-0.55
<b>Water Solubility:</b>	Dispersible.
<b>pH:</b>	6.6 (1% in water)
<b>Volatility:</b>	Negligible at normal ambient temperatures.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	Not applicable.
<b>Coeff Oil/water distribution:</b>	3.36 (log P octanol/water)
<b>Viscosity:</b>	Not applicable.
<b>Autoignition temp:</b>	No data.

## Section 10 - Stability and Reactivity

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatibilities:** strong oxidising agents.

**Fire Decomposition:** Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form hydrogen chloride gas, other compounds of chlorine. May form hydrogen fluoride gas and other compounds of fluorine. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** This product will not undergo polymerisation reactions.

## Section 11 - Toxicological Information

**Local Effects:**

**Target Organs:** There is no data to hand indicating any particular target organs.

## Classification of Hazardous Ingredients

Ingredient

Risk Phrases

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

**Carfentrazone Ethyl Ester:** LD<sub>50</sub> Oral, Rat >5000mg/kg

LD<sub>50</sub> Dermal, Rabbit = >5000mg/kg

LC<sub>50</sub> Inhalation, Rat = >5.72mg/L/4hr

**SKIN:** Non-irritant. Not a skin sensitiser (guinea pig).

**EYES:** Mild irritant (rabbit).

In studies using laboratory animals Carfentrazone-ethyl did not cause reproductive, developmental nor carcinogenic effects.

Negative in *in vitro* tests for genotoxicity.

The ADI for Carfentrazone ethyl ester is set at 0.03mg/kg/day. The corresponding NOEL is set at 3mg/kg/day.

## Section 12 - Ecological Information

This product is toxic to aquatic organisms. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

**Environmental fate, persistence and degradation:**

Carfentrazone-ethyl is rapidly degraded in soils under aerobic and anaerobic conditions. The half life in soil is 1-2 days. It is rapidly hydrolysed at pH 9 but stable at pH 5.

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Field studies show that Carfentrazone-ethyl has low mobility in soil.

**Aquatic toxicity:**

Toxic to aquatic organisms. Bioconcentration factor in fish of 167.

Risk of bioaccumulation in an aquatic species is low.

Log Octanol/Water Partition Coefficient: 3.36

**Birds:** LD<sub>50</sub> bobwhite quail: >1000mg/kg

**Fish:** LC<sub>50</sub> fish: 1.6-43mg/L

**Bees:** LD<sub>50</sub> >35µg/bee

**Daphnia:** EC<sub>50</sub> 9.8mg/L

### Section 13 - Disposal Considerations

**Disposal:** Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

### Section 14 - Transport Information

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

### Section 15 - Regulatory Information

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

### Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

**Acronyms:**

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 <sup>th</sup> edition)
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

**Contact Points:**

Call Adama on (02)9431 7800 and ask for the technical manager.

Fax: (02)9431 7700

**Police and Fire Brigade:**

**Dial 000**

**Emergency contact:**

**1800 024 973 (24 hours)**

**If ineffective:**

**Dial Poisons Information Centre  
(13 1126 from anywhere in Australia)**

The information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, it is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. Adama Australia Pty Ltd makes no representation as to the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability whatsoever, whether with respect to negligence or otherwise, for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Data Sheet.

Please read all labels carefully before using product.

### SAFETY DATA SHEET



This MSDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)  
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<http://www.kilford.com.au/> Phone (02)9251 4532

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