

## Section 1 - Identification of The Material and Supplier

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**Chemical nature:** Pendimethalin is a 2,6-dinitroaniline derivative.  
**Trade Name:** Sabakem Pendimethalin 330EC Herbicide  
**APVMA Code:** 67489  
**Product Use:** Agricultural herbicide for use as described on the product label.  
**Creation Date:** August, 2013  
**This version issued:** August, 2018 and is valid for 5 years from this date.  
**Poisons Information Centre: Phone 13 1126 from anywhere in Australia**

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Xi, Irritating. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

**SUSMP Classification:** S5

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

**UN Number:** None allocated



### GHS Signal word: WARNING.

#### HAZARD STATEMENT:

- H227: Combustible liquid.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H320: Causes eye irritation.

#### PREVENTION

- P264: Wash contacted areas thoroughly after handling.
- P280: Wear protective gloves, protective clothing and eye or face protection.

#### RESPONSE

- P337: If eye irritation persists: seek medical attention.
- P362: Take off contaminated clothing and wash before reuse.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P332+P313: If skin irritation occurs: Get medical advice.
- P337+P313: If eye irritation persists: Get medical advice.
- P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

#### STORAGE

- P402+P404: Store in a dry place. Store in a closed container.
- P403+P235: Store in a well-ventilated place. Keep cool.

#### DISPOSAL

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

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## Emergency Overview

**Physical Description & colour:** Clear orange-yellow liquid.

**Odour:** Aromatic solvent odour.

**Major Health Hazards:** Pendimethalin is slightly to practically nontoxic by ingestion, with reported oral LD<sub>50</sub> values of 1050 mg/kg to greater than 5000 mg/kg in rats. It is slightly to practically nontoxic by skin exposure, with reported dermal LD<sub>50</sub> values of greater than 2000 mg/kg. It is a skin and eye irritant in rabbits. The inhalation 4-hour LC<sub>50</sub> for technical Pendimethalin in rats is 320 mg/L, indicating practically no toxicity via this route. Some formulated products may show slight toxicity by inhalation, and may have a greater capacity to cause skin irritation. Inhalation of dusts or fumes may be mildly to moderately irritating to the linings of the mouth, nose, throat, and lungs. Product is irritating to eyes and skin, if aspirated, may cause lung damage.

## Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Pendimethalin	40487-42-1	330g/L	not set	not set
Liquid hydrocarbon		578g/L	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 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 should not be exceeded for more than 15 minutes and should not be repeated for 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 SDS 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:** Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

**Eye Contact:** Quickly and gently blot material from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately.

**Ingestion:** If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call 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. This product is classified as a C1 combustible product. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

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

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade.

**Flash point:** 62°C

**Upper Flammability Limit:** no data

**Lower Flammability Limit:** No data

**Autoignition temperature:** No data.

**Flammability Class:** C1 combustible

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## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type A cartridge, suitable for organic vapours. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Avoid using sawdust or other combustible material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. 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 SDS 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 SDS 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:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. 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 Pendimethalin is set at 0.1mg/kg/day. The corresponding NOEL is set at 12mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, June 2013.

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:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

**Eye Protection:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

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

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

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## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Clear orange-yellow liquid.
<b>Odour:</b>	Aromatic solvent odour.
<b>Boiling Point:</b>	155-181°C at 100kPa
<b>Freezing/Melting Point:</b>	No specific data. Liquid at normal temperatures.
<b>Volatiles:</b>	No specific data. Expected to be low at 100°C.
<b>Vapour Pressure:</b>	4 mPa @ 25°C (Pendimethalin)
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	1.01-1.05 at 20°C
<b>Water Solubility:</b>	Insoluble.
<b>pH:</b>	5-7
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	5.18 (Pendimethalin) (log P octanol/water)
<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:** This product should be kept in a cool place, preferably below 30°C. Keep away from sources of sparks or ignition. Handle and open containers carefully. Any electrical equipment in the area of this product should be flame proofed.

**Incompatibilities:** strong acids, strong bases, oxidising agents.

**Fire Decomposition:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Water. 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

**Toxicity: Chronic toxicity:** Increases in alkaline phosphatase level and liver weight were produced in dogs fed 50 mg/kg/day for 2 years, but not at a dose of 12.5 mg/kg/day. In a 90-day feeding study of rats, no effects were observed at doses of 40 mg/kg/day.

**Reproductive effects:** In a three-generation reproductive study of rats tested at levels up to 250 mg/kg/day, there were slightly fewer offspring and they showed decreased weight gain from weaning to maturity. No effects were observed at 30 mg/kg/day. This evidence suggests that Pendimethalin is unlikely to cause reproductive effects in humans under normal circumstances.

**Teratogenic effects:** No birth defects and no toxic effects on foetuses occurred when pregnant rats were given 500 mg/kg/day, the highest dose tested. No foetotoxic or teratogenic effects were seen at the highest dose tested (60 mg/kg/day) in a teratology study with rabbits, although maternal toxicity was seen at 30 mg/kg/day. It does not appear that Pendimethalin is teratogenic.

**Mutagenic effects:** Several mutagenicity studies, including tests on live animals and mammalian and bacterial cell cultures, have all indicated that Pendimethalin has no mutagenic activity.

**Carcinogenic effects:** Pendimethalin did not increase tumour formation in mice given dietary doses of 75 mg/kg/day over an 18-month period. This evidence suggests that Pendimethalin is not carcinogenic.

**Organ toxicity:** Chronic exposure to Pendimethalin has resulted in increased liver weights in test animals.

**Fate in humans and animals:** Pendimethalin is largely unabsorbed from the gastrointestinal tract, and excreted unchanged in the faeces. Pendimethalin, which does become absorbed into the bloodstream from the gastrointestinal tract, is rapidly metabolized in the kidneys and liver and is then excreted as metabolites via urine. One day after administration to rats, 90% of a 37 mg/kg dose was recovered in faeces and urine. After 4 days this figure was 96%. Lower doses resulted in almost 100% excretion within 4 days. Tissue burdens of the compound were on the order of 0.3 mg/kg, with slightly higher concentrations in the body fat.

## Potential Health Effects

### Inhalation

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**Short term exposure:** Significant inhalation exposure is considered to be unlikely. Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

**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. However product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased. Product contains pendimethalin, which is a dermal sensitiser. Repeated or prolonged exposure may result in sensitisation. Once sensitised, contact with this product, or any other product containing pendimethalin, may result in an allergic reaction, which in some cases may be severe.

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

#### **Eye Contact:**

**Short term exposure:** Exposure via eyes is considered to be unlikely. Available data shows that this product is not harmful. This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

**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. Because of the low viscosity of this product, it may directly enter the lungs if swallowed, or if subsequently vomited. Once in the lungs, it is very difficult to remove and can cause severe injury or death. This product is unlikely to cause any irritation problems in the short or long term.

**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 12 - Ecological Information**

**Effects on birds:** Pendimethalin is slightly toxic to birds, with an acute oral LD<sub>50</sub> of 1421 mg/kg in mallard duck and 8-day dietary LC<sub>50</sub> values of greater than 3149 mg/kg in bobwhite quail, and greater than 10,900 mg/kg in mallard duck.

**Effects on aquatic organisms:** Pendimethalin is highly toxic to fish and aquatic invertebrates. The reported 96-hour LC<sub>50</sub> for Pendimethalin in bluegill sunfish is 199 µg/L, in rainbow trout is 138 µg/L, and in channel catfish is 420 µg/L. The 48-hour LC<sub>50</sub> in *Daphnia magna*, is 280 µg/L. The bioconcentration factor for this compound in whole fish is 5100, indicating a moderate potential to accumulate in aquatic organisms.

**Effects on other organisms:** Pendimethalin is nontoxic to bees.

#### **Environmental Fate:**

**Breakdown in soil and groundwater:** Pendimethalin is moderately persistent, with a field half-life of approximately 40 days. It does not undergo rapid microbial degradation except under anaerobic conditions. Slight losses of Pendimethalin can result from photodecomposition and volatilization. Pendimethalin is strongly adsorbed by most soils. Increasing soil organic matter and clay is associated with increased soil binding capacity. It is practically insoluble in water, and thus will not leach appreciably in most soils, and should present a minimal risk of groundwater contamination.

**Breakdown in water:** Pendimethalin is stable to hydrolysis, but may be degraded by sunlight in aquatic systems. Pendimethalin may also be removed from the water column by binding to suspended sediment and organic matter. It is rapidly degraded under anaerobic conditions once precipitated to sediment.

**Breakdown in vegetation:** Pendimethalin is absorbed by plant roots and shoots, and inhibits cell division and cell elongation. Once absorbed into plant tissues, translocation is limited and Pendimethalin breaks down via oxidation. Pendimethalin is not absorbed by the leaves of grasses, and only very small amounts are taken up by plants from the soil. Residues on crops at harvest are usually below detectable levels (0.05 ppm).

## **Section 13 - Disposal Considerations**

**Disposal:** Instructions concerning the disposal of this product and its containers are given on the registered label. These should be carefully followed. 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

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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

**UN Number:** This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

### Section 15 - Regulatory Information

**AICS:** All of the significant ingredients in this product are compliant with NICNAS regulations. The following ingredients: Pendimethalin, liquid hydrocarbon are mentioned in the SUSMP.

### Section 16 - Other Information

**This SDS 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>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)  
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### SAFETY DATA SHEET