

Section 1 - Identification of The Material and Supplier

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Chemical nature: Difethialone is an anticoagulant
Trade Name: **Rentokil Advanced-Kil Blocks**
APVMA Code: 65357
Product Use: Rodenticide.
Creation Date: **December, 2010**
This version issued: **December, 2010**

Section 2 - Hazards Identification

Statement of Hazardous Nature

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

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

Risk Phrases: Not Hazardous - No criteria found.

Safety Phrases: S20, S22, S36, S45. When using, do not eat or drink. Do not breathe dust. Wear suitable protective clothing. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show this MSDS where possible).

SUSMP Classification: S6

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

UN Number: None allocated

Emergency Overview

Physical Description & colour: Blue coloured blocks.

Odour: No odour.

Major Health Hazards: Clinical symptoms: nosebleed, gum bleed, spitting blood, multiple or large haematoma, generally sudden appearance of an unusual visceral pain.

Biological symptoms: blood in the urine, increase in coagulation time.

Potential Health Effects

Inhalation:

Short term exposure: 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. 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 believed to be not irritating to eyes.

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. This product is unlikely to cause any irritation problems in the short or long term.

NOTE: Although this product is not classified as dangerous, the active ingredient may cause serious damage to health by prolonged exposure. The active ingredient has anti-vitamin K properties and absorption or ingestion can cause blood coagulation problems including haemorrhagic syndrome. See First Aid section below.

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 ³)	STEL (mg/m ³)
Difethialone	104653-34-1	0.025g/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:

In all cases of suspected exposure, medical assistance should be sought immediately. Show this data sheet. See antidotal therapy below. Note that poisoning symptoms may develop over the course of several days.

The Poisons Information Centre number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times.

EYE CONTACT:

- Hold eye 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 eye.
- Monitor for symptoms described above.

INHALATION:

- The preparation is a non-dusty block. Inhalation is not applicable as a route of exposure.

SKIN:

- Remove contaminated clothing. Launder before re-use.
- Rinse skin immediately with soap and water.
- Monitor for symptoms described above.

INGESTION:

- Wash out mouth with plenty of water.
- If swallowed, seek medical advice immediately and show the container/label/safety data sheet.
- Do not induce vomiting unless told to do so by the Poisons Information centre or doctor.
- Do not give anything by mouth to an unconscious person.

MEDICAL ADVICE:

Primary treatment is antidotal therapy rather than clinical assessment.

Antidotal therapy: SPECIFIC Vitamin K1 (phytomenadione).

Analogues of Vitamin K1 (vitamin K3: menadione for example) are not very active and should not be used. The efficacy of the treatment should be followed by measuring the coagulation time. The treatment should not be discontinued until the coagulation time returns to normal and REMAINS normal. In case of serious intoxication, it may be necessary to administer, in addition to vitamin K1, blood or frozen fresh plasma or PPSB coagulant blood fraction transfusions.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: 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: Suitable extinguishing media are 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: 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: 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. 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.

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. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. 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: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. 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/m³)

STEL (mg/m³)

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

The ADI for Difethialone is set at 0.0000006mg/kg/day. The corresponding NOEL is set at 0.00125mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, March 2010.

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 dusts are minimised.

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 used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour: Blue coloured blocks.

Odour: No odour.

Boiling Point: Not available.

Freezing/Melting Point: No specific data. Solid at normal temperatures.

Volatiles: No specific data. Expected to be low at 100°C.

Vapour Pressure: Negligible at normal ambient temperatures.

Vapour Density: Not applicable.

Specific Gravity: No data. Bulk density 1.0

Water Solubility: Insoluble.

pH: 6.0 (1% in water at 25°C)

Volatility:	Negligible at normal ambient temperatures.
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water distribution:	No data
Viscosity:	Not applicable.
Autoignition temp:	No data.
Refractive index:	Not applicable.
Optical rotation:	Not applicable.

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: No particular Incompatibilities.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and 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 oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. 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.

Difethialone: LD₅₀ Oral, Rat >5000mg/kg LD₅₀ Dermal, Rabbit = >2000mg/kg

REPEATED DOSE TOXICITY: Studies conducted on active ingredient

90 day rat: LOAEL = 4 µg/kg bw/day based on haemorrhagic changes seen at necropsy

90 day dog: LOAEL = 20 µg/kg bw/day based on haemorrhagic changes seen at necropsy

The active ingredient is classified as having a danger of serious damage to health by prolonged exposure

CARCINOGEN DATA: No evidence of carcinogenicity.

MUTAGENIC DATA: No *in vivo* or *in vitro* evidence of mutagenicity.

REPRODUCTIVE TOXICITY: No evidence of reproductive toxicity.

OTHER COMMENTS: The active ingredient is a powerful anticoagulant rodenticide which has cumulative toxic effects due to anti-Vitamin K activity.

Section 12 - Ecological Information

This active ingredient is very toxic to aquatic organisms but present in the product only in small concentrations. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Birds: LD₅₀ Japanese quail: 23.5mg/kg

LD₅₀ bobwhite quail: 0.264mg/kg

LD₅₀ mallard: 1.94mg/kg

LD₅₀ bobwhite quail: 0.56mg/kg

Fish: LC₅₀ *Lepomis macrochirus*: 0.075mg/L

LC₅₀ *Oncorhynchus mykiss*: 0.051mg/L

Algae: EC₅₀ 0.065mg/L

Daphnia: EC₅₀ 0.0044mg/L

The product is therefore very toxic to aquatic organisms.

TERRESTRIAL TOXICITY

Earthworm Acute NOEC: 500 mg/kg soil

Acute LOEC: 62.5 mg/kg soil

Acute LC₅₀: >1000 mg/kg soil

MOBILITY

The substance is strongly and rapidly adsorbed to soil. Even if released indirectly to soil in small quantities, it is not likely to move through the soil profile and is unlikely to reach groundwater in significant quantities.

PERSISTENCE AND DEGRADABILITY

The substance is not considered to be biodegradable under environmentally relevant conditions or during sewage treatment processes. Hydrolysis and photolysis is not expected to be significant processes in the environment. The substance is slowly degraded in soil with a $DT_{50} > 1$ year under aerobic conditions and is not expected to volatilise to or persist in air in significant quantities.

BIOACCUMULATIVE POTENTIAL

The Log Pow is 6.3 which indicates there is a potential to bioaccumulate in the food chain.

OTHER ADVERSE EFFECTS

Up to this date no other adverse effects are known.

Section 13 - Disposal Considerations

Disposal: The product is a rodenticide and if ingested by domestic or wild animals will cause death. Care should therefore be taken to ensure that disposal methods do not expose the preparation to non-target wild or domestic animals or pets. Dispose of empty container by wrapping in paper, placing in a plastic bag and putting in garbage. Contact your supplier or the Local Authority or a reputable waste disposal company for collection and disposal of unwanted product. The preparation cannot be safely neutralised. Do not release into drains or waterways. Refer to local waste and Environmental regulations.

The empty container should not be used for any other purpose and should be disposed of considering the comments above, preferably by incineration.

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. The following ingredient: Difethialone, is mentioned in the SUSMP.

Section 16 - Other Information

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

Acronyms:

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

THIS MSDS 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 MSDS 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 MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2001(2003)]
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