



# SAFETY DATA SHEET

Product Name: Shield

Page: 1 of 6

This revision issued: January, 2022

## Section 1 - Identification of The Material and Supplier

Regent Industries Pty Ltd  
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Mitchell, ACT 2911

Phone: (02) 6241 7119

**Chemical nature:** Water solution of ingredients.  
**Trade Name:** Shield  
**Product Use:** Insect repellent.  
**Creation Date:** August, 2013  
**This version issued:** January, 2022 and is valid for 5 years from this date.

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of SWA.

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

**Risk Phrases:** Not Hazardous - No criteria found..

**Safety Phrases:** S23, S25. Do not breathe mists or spray. Avoid contact with 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.

### RESPONSE

P353: Rinse skin or shower with water.

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

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

P337+P313: If eye irritation persists: Get medical advice.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

### STORAG

P402+P404: Store in a dry place. Store in a closed container.

### DISPOSAL

P501: If they can not be recycled, dispose of contents and containers to landfill (see Section 13 of this SDS).

### Emergency Overview

**Physical Description & Colour:** Clear, colourless liquid.

**Odour:** Mild odour.

**Major Health Hazards:** No major health hazards are known.

### Potential Health Effects

#### Inhalation:

**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

## SAFETY DATA SHEET

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Poisons Information Centre: 131126 from anywhere in Australia – (0800 764 766 in New Zealand)

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 may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort which should disappear once product is removed.

**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 is believed to be mildly irritating to mucous membranes but is unlikely to cause anything more than mild 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** Piperonyl Butoxide is Class 3 - unclassifiable as to carcinogenicity to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

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### Section 3 - Composition/Information on Ingredients

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Ingredients	CAS No	Conc,%	TWA (mg/m3)	STEL (mg/m3)
Piperonyl butoxide	51-03-6	4g/L	not set	not set
Pyrethrum	8003-34-7	1g/L	5	not set
Other non hazardous ingredients	various	10-30	not set	not set
Water	7732-18-5	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.

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### Section 4 - First Aid Measures

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**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** Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

**Eye Contact:** No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more

than a few minutes. 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.

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### Section 5 - Fire Fighting Measures

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**Fire and Explosion Hazards:** The major hazard in fires is usually inhalation of heated and toxic or oxygen

#### SAFETY DATA SHEET

deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Only small quantities of decomposition products are expected from this product at temperatures normally achieved in

a fire. This will only occur after heating to dryness.

Fire decomposition products from this product are not expected to be hazardous or harmful.

**Extinguishing Media:** Not Combustible. Use extinguishing media suited to burning materials.

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

**Flash point:** Does not burn.

**Upper Flammability Limit:** Does not burn.

**Lower Flammability Limit:** Does not burn.

**Autoignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn.

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### Section 6 - Accidental Release Measures

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**Accidental release** Minor spills do not normally need any special clean up 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 rubber, PVC. Eye/face protective equipment should comprise as a minimum,

protective glasses and, preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the clean up area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

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. 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. 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.

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### Section 7 - Handling and Storage

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**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:** Store packages of this product in a cool place. Make sure that containers of this product are kept tightly closed. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

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### Section 8 - Exposure Controls and Personal Protection

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

#### SAFETY DATA SHEET

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> )
Pyrethrum	5	not set

The ADI for Piperonyl butoxide is set at 0.1mg/kg/day. The corresponding NOEL is set at 16mg/kg/day.

The ADI for Pyrethrum is set at 0.04mg/kg/day. The corresponding NOEL is set at mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, Dec 2012.

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** 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:** There is no specific recommendation for any particular protective material type.

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

### Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Clear, colourless liquid.
<b>Odour:</b>	Mild odour.
<b>Boiling Point:</b>	Approximately 100°C at 100kPa.
<b>Freezing/Melting Point:</b>	Below 0°C.
<b>Volatiles:</b>	>90%
<b>Vapour Pressure:</b>	2.37 kPa at 20°C (water vapour pressure).
<b>Vapour Density:</b>	As for water.
<b>Specific Gravity:</b>	1.0
<b>Water Solubility:</b>	Completely soluble in water.
<b>pH:</b>	7-8 (as supplied)
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	As for water.
<b>Coeff Oil/water distribution:</b>	No data
<b>Autoignition temp:</b>	Not applicable - does not burn.

### 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 containers tightly closed.

**Incompatibilities:** strong oxidising agents.

**Fire Decomposition:** Only small quantities of decomposition products are expected from this products at temperatures normally achieved in a fire. This will only occur after heating to dryness. Carbon dioxide, and if combustion is incomplete, carbon monoxide. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Water, sodium compounds. 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.

### SAFETY DATA SHEET

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## Section 11 - Toxicological Information

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### Toxicity: Piperonyl butoxide

**Carcinogenic Potential:** Marginally higher incidences of benign liver tumours in mice were observed following lifetime high dose exposures to Piperonyl Butoxide. The significance of this observation is questionable and under review.

The doses at which tumours were observed greatly exceeded potential human exposure from labelled uses. Doses at which these effects were observed greatly exceeded human dietary intake. At anticipated dietary exposure levels, it is highly unlikely that this product would result in carcinogenic effects.

### Other toxicity information:

**Mutagenicity:** Piperonyl Butoxide was not genotoxic in several tests, including the Ames mutagenicity assay, chromosome aberration in Chinese hamster ovary (CHO) cells, CHO/HGPRT assay with S9 activation, and in the unscheduled DNA synthesis (UDS) assay in cultured human liver cells.

**Teratology/Reproductive effects:** There were no birth defects or adverse effects on reproductive parameters in rats or rabbits. Piperonyl Butoxide is not considered to be teratogenic.

**Toxicity of other components:** Not applicable.

**Target Organs:** Central nervous system.

There is no data to hand indicating any particular target organs.

### Classification of Hazardous Ingredients

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

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## Section 12 - Ecological Information

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Insufficient data to be sure of status.

Expected to not be an environmental hazard Summary of Effects: Piperonyl Butoxide is highly toxic to fish and aquatic organisms.

**Eco-Acute Toxicity:** Rainbow Trout 96-hour LC50 6.12 ppm

☑ Bluegill Sunfish 96-hour LC50 5.37 ppm

☑ Daphnia Magna 48-hour LC50 0.51 ppm

☑ Honeybee, acute >25 µg/bee

☑ Bobwhite Quail Oral LD50 >2,250 mg/kg

☑ Bobwhite quail 5 day dietary LC50 >5,620 ppm

☑ Mallard 5 day dietary LC50 >5,620 ppm

☑ Eco-Chronic Toxicity:

☑ Fish (Fathead Minnow) Early life stage MATC >0.18 mg/L - <0.42 mg/L

☑ Invertebrate (*Daphnia Magna*) life cycle MATC >30 µg/L - <47 µg/L

**Environmental Fate:** Not available..

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## Section 13 - Disposal Considerations

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**Disposal:** This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, consider landfill.

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## Section 14 - Transport Information

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**ADG Code:** 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.

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## Section 15 - Regulatory Information

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

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The following ingredient: Piperonyl butoxide, Pyrethrum, is 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>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

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" (December 2011)

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