# SAFETY DATA SHEET

**Revision Date** 29-Aug-2023 **Version** 17

## Section 1: Identification

**Product identifier**

**Product Name** Armour

**Product Code** A-0924

**Other means of identification**

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Swimming pool chemical

**Uses advised against** Do not mix with other chemicals

**Details of the supplier of the safety data sheet**

**Supplier**
BioLab Limited
Care of MGI + MORE,
Level 3, 27 Bath Street
Parnell, Auckland 1052
New Zealand

**For further information, please contact**

**Contact Point** Customer Service: 0 800 441 662 (NZ)
Customer Service: 1800 635 743 (AU)

**E-mail address** BiolabAU@biolabinc.com

**Emergency telephone number**

**Emergency Telephone** In an Emergency: Dial 111
For SPECIALIST advice in an EMERGENCY ONLY phone CHEMCALL- FREE CALL ALL HOURS: 0800 243 622

## Section 2: Hazard identification

**GHS Classification**

| | |
|---|---|
| **Acute toxicity - Oral** | Category 4 (HSNO - 6.1D) |
| **Acute toxicity - Inhalation (Dusts/Mists)** | Category 4 (HSNO - 6.1D) |
| **Serious eye damage/eye irritation** | Category 2A (HSNO - 6.4A) |
| **Acute aquatic toxicity** | Category 1 (HSNO - 9.1A) |
| **Chronic aquatic toxicity** | Category 1 (HSNO - 9.1A) |

**Label elements**

**Signal word**
DANGER

**Hazard statements**
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H410 - Very toxic to aquatic life with long lasting effects
H332 - Harmful if inhaled

**Precautionary Statements - Prevention**
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapours/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wear eye/face protection
Avoid release to the environment

**Precautionary Statements - Response**
Specific treatment is urgent (see .? on this label)
**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
**Inhalation**
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a doctor
**Ingestion**
IF SWALLOWED: Call a POISONS CENTRE or doctor if you feel unwell
Rinse mouth
**Spill**
Collect spillage

**Precautionary Statements - Storage**
Store in a well-ventilated place. Keep container tightly closed
Store locked up

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Other hazards which do not result in classification**
May be harmful in contact with skin. May cause respiratory irritation.

## Section 3: Composition/information on ingredients

| Chemical name | CAS No | Weight-% |
|---|---|---|
| Sodium Dichloro-S-Triazinetrione | 2893-78-9 | >60 |
| sodium bromide | 7647-15-6 | 10-30 |

## Section 4: First-aid measures

**Description of first aid measures**

**General advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation** If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

**Skin contact** Wash skin with soap and water.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor or poisons information centre immediately.

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Coughing and/or wheezing. Difficulty in breathing. May cause redness and tearing of the eyes. Burning sensation.

**Indication of any immediate medical attention and special treatment needed**

**Note to doctors** Treat symptomatically.

## Section 5: Fire-fighting measures

**Hazchem code** 2X

**Suitable Extinguishing Media**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical**

**Specific hazards arising from the chemical** No information available.

**Special protective actions for firefighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## Section 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid generation of dust. Do not breathe dust. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labelled containers.

**Precautions to prevent secondary hazards**

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: Handling and storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not breathe dust. Avoid generation of dust. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before re-use.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Do not breathe dust. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before re-use. Contaminated work clothing must not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

**Incompatible materials** None known based on information supplied.

## Section 8: Exposure controls/personal protection

**Control parameters**

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

| | |
|---|---|
| **Engineering controls** | Showers<br>Eyewash stations<br>Ventilation systems. |

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye/face protection** | If splashes are likely to occur, wear safety glasses with side-shields. |
| **Hand protection** | Wear suitable gloves. |
| **Skin and body protection** | Wear suitable protective clothing. |
| **Respiratory protection** | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. |
| **Environmental exposure controls** | No information available. |

## Section 9: Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | granules |
| **Colour** | white |
| **Odour** | faint halogen. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | 4.5 | Saturated aqueous solution |
| **Melting point / freezing point** | 240 °C | Decomposes |
| **Boiling point/boiling range** | No data available | None known |
| **Flash point** | No data available | None known |
| **Evaporation rate** | No data available | None known |
| **Flammability (solid, gas)** | No data available | None known |
| **Flammability Limit in Air** | | None known |
| **Upper flammability limit:** | No information available | |
| **Lower flammability limit:** | No information available | |
| **Vapour pressure** | No data available | None known |
| **Vapour density** | No data available | None known |
| **Relative density** | No data available | None known |
| **Water solubility** | No data available 250 g/L | |
| **Solubility(ies)** | No data available | None known |
| **Partition coefficient** | No data available | None known |
| **Auto-ignition temperature** | No data available | None known |
| **Decomposition temperature** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |
| **Explosive properties** | No information available. | |
| **Oxidising properties** | No information available. | |

**Other information**

| | |
|---|---|
| **Softening point** | No information available |
| **Molecular weight** | No information available |
| **VOC content** | No information available |
| **Density** | 0.90 - 0.93 g/cm3 |
| **Bulk density** | No information available |
| **Particle characteristics** | No information available |

## Section 10: Stability and reactivity

**Reactivity**

**Reactivity** Do not mix with other chemicals. Do not mix with different types of chlorinating chemicals. Do not allow contact with combustible material such as paper, fabric, saw dust and kerosene. May explode with combustibles.

**Chemical stability**

**Stability** Stable under normal conditions.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**Possibility of hazardous reactions**

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid**

**Conditions to avoid** Excessive heat.

**Incompatible materials**

**Incompatible materials** None known based on information supplied.

**Hazardous decomposition products**

**Hazardous Decomposition Products** Halogen containing gases. Carbon oxides. Chlorine gas. Bromine gas.

## Section 11: Toxicological information

**Acute toxicity**

**Information on likely routes of exposure**

**Product Information**

**Inhalation** Irritating to respiratory system. Specific test data for the substance or mixture is not available. Fatal if inhaled. (based on components). May cause irritation of respiratory tract.

**Eye contact** Risk of serious damage to eyes. Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

**Skin contact** Irritating to skin. Contact with moist skin may cause skin burns. Causes burns. May be harmful in contact with skin. Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation. May be harmful in contact with skin.

**Ingestion** Harmful if swallowed. Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Harmful if swallowed. (based on components).

**Symptoms** Coughing and/or wheezing. Difficulty in breathing. May cause redness and tearing of the eyes.

**Acute toxicity**

**Numerical measures of toxicity**

**The following values are calculated based on chapter 3.1 of the GHS document**

**ATEmix (oral)** 500.00 mg/kg
**ATEmix (dermal)** 4,081.60 mg/kg
**ATEmix (inhalation-dust/mist)** 0.270 mg/l

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Sodium Dichloro-S-Triazinetrione | = 735 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 50 mg/L ( Rat ) 1 h |
| sodium bromide | = 3500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | - |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** May cause skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitisation** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** May cause respiratory irritation.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Data used to identify the health effects** Refer to Section 16 for Key literature references and sources for data used to compile the SDS.

## Section 12: Ecological information

**Ecotoxicity**

**Aquatic ecotoxicity** Very toxic to aquatic life with long lasting effects.

**Unknown aquatic toxicity** 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| Sodium Dichloro-S-Triazinetrione | - | LC50: 0.13 mg/L (96h, Salmo gairdneri) | EC50: 0.28 mg/L (48h, Daphnia magna) |
| sodium bromide | EC50: 5800 - 24000mg/L (96h, Scenedesmus pannonicus) | LC50: 24000 - 96000mg/L (96h, Oryzias latipes)<br>LC50: =24000mg/L (96h, Oryzias latipes) | EC50: 5800 - 48000mg/L (48h, Daphnia magna)<br>EC50: 5700 - 10800mg/L (48h, Daphnia magna) |

| | | | |
|---|---|---|---|
| | | LC50: 16000 - 24000mg/L (96h, Poecilia reticulata)<br>LC50: =16000mg/L (96h, Poecilia reticulata)<br>LC50: 15614 - 17428mg/L (96h, Pimephales promelas)<br>LC50: >1000mg/L (96h, Lepomis macrochirus)<br>LC50: 0.054 - 0.081mg/L (96h, Oncorhynchus mykiss)<br>LC50: >1000mg/L (96h, Oncorhynchus mykiss) | |

**Terrestrial ecotoxicty**

| Chemical name | Earthworm | Avian | Honeybees |
|---|---|---|---|
| sodium bromide | - | Dietary Toxicity: LC50 > 5633 ppm (Anas platyrhynchos, 5 Days)<br>Dietary Toxicity: LC50 > 5633 ppm (Colinus virginianus, 5 Days)<br>Dietary Toxicity: NOEC = 1784 ppm (Anas platyrhynchos, 5 Days)<br>Dietary Toxicity: NOEC = 1784 ppm (Colinus virginianus, 5 Days)<br>Acute Oral Toxicity: LD50 > 2250 mg/kg (Colinus virginianus) | - |

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** There is no data for this product.

**Mobility in soil**

**Mobility** No information available.

**Other adverse effects**

No information available.

## Section 13: Disposal considerations

**Waste treatment methods**

**Waste from residues/unused products** Dispose of product in packaging in a way that is consistent with the EPA Consolidation 30 April 2021 of the Hazardous Substances (Disposal) Notice 2017 and the Act.
Treat the substance using a method that changes the characteristics or composition of the substance so that the substance is no longer a hazardous substance; or export the substance from New Zealand as waste.
Substances which are hazardous to human health or corrosive to metals – may be discharged into the environment if a tolerable exposure limit has been set for the substance (or a component of that substance); and the discharge does not, after reasonable mixing,

result in the concentration of the substance in an environmental medium exceeding the tolerable exposure limit. If there is no tolerable exposure limit for the substance, then it may only be discharged into the environment if the substance is very rapidly converted to substances that are not hazardous substances.
Environmentally hazardous substances – if the substance, or if it contains a component that is hazardous to the aquatic environment or bioaccumulative and not rapidly degradable, then any component that is bioaccumulative and not rapidly degradable must be removed. The product may only be discharged into the environment if an environmental exposure limit has been set for the substance (or a component of the substance); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the environmental exposure limit.

**Contaminated packaging**

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from.
Packages may only be reused or recycled if:
- the substance has a physical hazard other than corrosive to metal, and has been treated to remove any residual contents of the hazardous substance;
- or for substances that have a health or environmental hazard, or corrosive to metal, the contents of the residue in the package are below the threshold for the substance to be classified as hazardous in the Hazardous Substances (Hazard Classification) Notice 2020.

## Section 14: Transport information

**Note:** Limited quantity (LQ) exception is possible

**Hazchem code** 2X

**Road Transport**

| | |
|---|---|
| **UN Number** | UN1759 |
| **Proper shipping name** | Corrosive solid, n.o.s. (Sodium dichloro-s-triazinetrione) |
| **Hazard Class** | 8 |
| **Packing Group** | III |

**IATA**

| | |
|---|---|
| **UN number or ID number** | UN1759 |
| **Proper shipping name** | Corrosive solid, n.o.s. (Sodium dichloro-s-triazinetrione) |
| **Transport hazard class(es)** | 8 |
| **Packing group** | III |
| **Description** | UN1759, Corrosive solids, n.o.s. (Sodium dichloro-s-triazinetrione), 8, III |

**IMDG**

| | |
|---|---|
| **UN number or ID number** | UN1759 |
| **Proper shipping name** | Corrosive solid, n.o.s. (Sodium dichloro-s-triazinetrione) |
| **Transport hazard class(es)** | 8 |
| **Packing Group** | III |
| **EmS-No** | F-A. S-B |
| **Description** | UN1759, Corrosive solids, n.o.s. (Sodium dichloro-s-triazinetrione), 8, III |

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
No information available

**Special precautions**
Please refer to the applicable dangerous goods regulations for additional information

## Section 15: Regulatory information

**Regulatory information**

**EPA New Zealand HSNO approval** HSR002684 - Water Treatment Chemicals (Subsidiary Hazard)

**code or group standard**

| | |
|---|---|
| **National regulations** | There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances |
| **Certified handlers, tracking and controlled substance license requirements** | Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information<br>Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information<br>Controlled substance licenses are required to possess certain explosives, vertebrate toxic agents and fumigants. See Part 7 of the Health and Safety at Work Regulation 2017 for more information |
| **Labellling Compliance Statement** | As allowed by the EPA Hazard Substances (Labelling) Notice 2017, Clause 31, the label associated with this product complies with the legislation set out by the Commonwealth of Australia. This product either complies with either the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP) and/or the Australian Pesticides and Veterinary Medicines Authority (APVMA) OR is not hazardous. |

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

| | |
|---|---|
| **NZIoC** | Complies |
| **TSCA** | Contact supplier for inventory compliance status. |
| **DSL/NDSL** | Contact supplier for inventory compliance status. |
| **EINECS/ELINCS** | Contact supplier for inventory compliance status. |
| **ENCS** | Contact supplier for inventory compliance status. |
| **IECSC** | Contact supplier for inventory compliance status. |
| **KECL** | Contact supplier for inventory compliance status. |
| **PICCS** | Contact supplier for inventory compliance status. |
| **AICS** | Complies. |

**Legend:**
**NZIoC** - New Zealand Inventory of Chemicals
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** - Japan Existing and New Chemical Substances
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

## Section 16: Other information

**Revision Date** 29-Aug-2023
**Revision Note**
***Indicates updated data since last publication.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|---|---|---|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | * | Skin designation |
| C | Carcinogen | | |

**Key literature references and sources for data used to compile the SDS**
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Program
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

**End of Safety Data Sheet**