

Material Safety Data Sheet

NON-Hazardous Substance, NON-Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: ARMSTRONG CEILING PANELS: OPTIMA & OPTRA

Synonyms: Armstrong Ceiling Panels: Optima & Optra

Armstrong Ceiling Panels: Optra Soundscapes

Recommended use: In ceilings in most types of commercial buildings to reduce noise.

Supplier: Armstrong World Industries Pty Ltd

ABN: 58 000 361 679

Street Address: 99 Derby Street, Silverwater NSW 2128, Australia

Telephone: +612 9748 1588

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Emergency telephone number: 0412 736 154

2. HAZARDS IDENTIFICATION

AUSTRALIA CLASSIFICATION

Based on available information, this material is not classified as hazardous according to criteria of Safe Work Australia.

Poisons Schedule (Aust): Not applicable

NEW ZEALAND CLASSIFICATION

Based on available information, this material is not classified as hazardous according to criteria of ERMA New Zealand.

DANGEROUS GOODS CLASSIFICATION

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

3. COMPOSITION INFORMATION

| CHEMICAL ENTITY | CAS NO. | PROPORTION |
|--|---------|-------------|
| Mineral wool (glass wool) | – | Approx. 95% |
| Ingredients determined to be non-hazardous | – | Balance |
| | | 100% |

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Telephone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Not applicable as supplied.

Skin contact: Not applicable as supplied.

Eye contact: If in eyes wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Ingestion: Not applicable as supplied.

PPE for First Aiders: Wear full length clothing, safety glasses and impervious gloves. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Specific hazards: Non-combustible material.

Fire fighting further advice: Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

Hazchem Code: Not applicable.

Suitable extinguishing media: Not combustible, however, if material is involved in a fire use water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

6. ACCIDENTAL RELEASE MEASURES

Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation. For small particles, sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal. If contamination of sewers or waterways has occurred advise local emergency services.

Dangerous Goods – Initial Emergency Response Guide No: Not applicable.

7. HANDLING AND STORAGE

Handling: Avoid skin and eye contact and inhalation of fibres and dust.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from incompatible materials described in Section 10. Handle these products carefully to minimise airborne dust and fibres.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

National occupational exposure limits: No value assigned for this specific material by Safe Work Australia or Department of Labour New Zealand.

However for:

| | TWA | | STEL | | CARCINOGEN CATEGORY | NOTICES |
|--------------------------|-----|-------------------|------|-------------------|---------------------|---------|
| | ppm | mg/m ³ | ppm | mg/m ³ | | |
| Synthetic mineral fibres | – | 0.5 fibres/mL | – | – | – | – |

As published by the Safe Work Australia or Department of Labour New Zealand. TWA – The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) – the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Biological Limit Values: As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering measures: Natural ventilation should be adequate under normal use conditions. When cutting or mechanically abrading material, ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Avoid generating and inhaling dusts. Use with local exhaust ventilation or while wearing dust mask.

Personal protection equipment: STANDARD SAFETY EQUIPMENT

When handling material wear standard safety equipment – including safety shoes.

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When cutting or mechanically abrading material wear full length clothing, safety glasses and impervious gloves. Avoid generating and inhaling dusts. If dust exists, wear dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Protective gloves should be worn when cutting panels and as per site regulations, however, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Form / Colour / Odour:** Ceiling panels, white with yellow substrate with no odour.
- **Solubility:** Insoluble in water
- **Specific Gravity (20°C):** Varies by product
- **Relative Vapour Density (air=1):** N App
- **Vapour Pressure (20°C):** N App
- **Flash Point (°C):** N App
- **Flammability Limits (%):** N App
- **Autoignition Temperature (°C):** N App
- **Melting Point/Range (°C):** N App
- **Boiling Point/Range (°C):** N App
- **pH:** N App
- **Viscosity:** N App
- **Total VOC (g/Litre):** N App

(Typical values only – consult specification sheet)

N Av = Not available

N App = Not applicable

10. STABILITY AND REACTIVITY

Chemical stability: This material is thermally stable when stored and used as directed.

Conditions to avoid: Elevated temperatures.

Incompatible Materials: Oxidising agents.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

- **Inhalation:** Not applicable as supplied. If material is cut or mechanically abraded material may be an irritant to mucous membranes and respiratory tract.
- **Skin contact:** Not applicable as supplied. If material is cut or mechanically abraded, contact with skin may result in irritation.
- **Eye contact:** Not applicable as supplied. If material is cut or mechanically abraded may be an eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.
- **Ingestion:** Not applicable as supplied. If material is cut or mechanically abraded swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

Acute toxicity / Chronic toxicity

- **Inhalation:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >20 mg/L
- **Skin contact:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg
- **Ingestion:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg
- **Corrosion/Irritancy:** Eye: this material has been classified as not corrosive or irritating to eyes. Skin: this material has been classified as not corrosive or irritating to skin.
- **Sensitisation:** Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.
- **Aspiration hazard:** This material has been classified as non-hazardous.
- **Specific target organ toxicity (single exposure):** This material has been classified as non-hazardous.

Chronic Toxicity

- **Mutagenicity:** This material has been classified as non-hazardous.
- **Carcinogenicity:** This material has been classified as non-hazardous.
- **Reproductive toxicity (including via lactation):** This material has been classified as non-hazardous.
- **Specific target organ toxicity (repeat exposure):** This material has been classified as non-hazardous.

Armstrong has had extensive biopersistence testing of "Glass Fibre ARM-FG12" undertaken by Fraunhofer Institute for Toxicology and Experimental Medicine (Hannover, Germany), February 2013. Animal studies were conducted in compliance with the Principles of Good Laboratory Practice (German Chemical Law, §19a Appendix 1, July 02, 1998). The protocol of the European Commission (ECB/TM 27 Rev. 7, 1998) with slight changes according to study protocol was followed.

The following halftimes were calculated by the method according to the protocol of the European Commission:

WHO fibre fraction (L > 5 µm, D < 3 µm, L/D > 3/1): ≤40 days

For the glass fibre, the halftime of the WHO fibre fraction meets the limit of ≤40 days given in Appendix II No. 5 of the German Gefahrstoffverordnung (Hazardous Substances Ordinance of November 26, 2010) which was set for using MMVF for heat and sound insulation in building construction in Germany.

Long fibre fraction (Length > 20 µm): <40 days

According to Directive 67/548/EEC (revised by guideline 97/69/EG of the Commission dated December 5th, 1997) Note Q, the classification as a carcinogen need not apply if the halftime for fibres longer than 20 µm is less than 40 days in the biopersistence test by intratracheal installation.

Quality assurance procedures are in place to control the chemistry of the fibres and ensure that they remain constant within the guidelines established by the European Certification Board for Mineral Wool Products. In addition, audit procedures are in place to periodically test for conformation and ensure continued compliance with the biopersistence requirements that enable the exoneration of Armstrong products from classification and labelling.

Armstrong declares that the mineral fibres used by Armstrong to produce ceiling products sold in Australia meet the low biopersistence set by the European Union under EC No 1272/2008. Note: Safe Work Australia have adopted EC No 1272/2008 as part of the classification criteria of hazardous substances.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Ecotoxicity: Expected to be harmless to aquatic organisms.

Risk of bioaccumulation in an aquatic species is expected to be negligible.

Expected to be harmless to terrestrial species.

Expected to be harmful to bees.

Persistence and degradability: The product is not readily biodegradable.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

Road and Rail Transport

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

Marine Transport

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Air Transport

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

15. REGULATORY INFORMATION

This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)
Basel Convention (Hazardous Waste)
International Convention for the Prevention of Pollution from Ships (MARPOL)

This material/constituent(s) is covered by the following requirements:

- All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Literary reference:

This Material Safety Data Sheet has been prepared by Chemical Data Services Pty Ltd (chemdata.com.au) on behalf of its client.

Reason(s) For Issue: Change to Recommended Use.

Material Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Armstrong World Industries Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.