



MATERIAL SAFETY DATA SHEET

COMPANY DETAILS

COMPANY: Juken New Zealand Ltd.,
Triboard Mill.

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1.) PRODUCT IDENTIFICATION

PRODUCT NAME: TRIBOARD.

OTHER NAMES: SUPER LOW DENSITY SPACEBOARD,
SPACEBOARD.

MANUFACTURERS CODE: Not Applicable.

UN NUMBER: None allocated.

DANGEROUS GOODS CLASS: Not classified as hazardous under NZ
HASNO.

TOXIC SUBSTANCES SCHEDULE: Not scheduled.

PHYSICAL DESCRIPTION:

A reconstituted, three layered wood panel, comprising medium density fibre (MDF) on the outer layers and strands of wood in the inner core layer. The wood is 100% derived from New Zealand plantation Pinus Radiata pine species. Available in thicknesses from 9mm to 55mm.

USES:

As a wooden building product for; Solid doors, fire doors, partitions, furniture, benchtops, access floor tiles, auditorium floors, sub-floors, fire walls, stairs, squash court construction, panel housing construction and general purpose panel use.

2.) INGREDIENTS

| Ingredient name | CAS # | Proportion (w/w) |
|--|------------|------------------|
| Wood in the form of fibres and strands | - | > 85% |
| Melamine urea formaldehyde resin | 25036-13-9 | < 15% |
| Polymeric diphenylmethane diisocyanate | 9016-87-9 | < 8% |
| Petroleum wax | 64742-61-6 | < 2% |

NOTES:

- In some cases, a proportion of less than 0.5% of Permethrin may be used in the product to act as an insecticide.
- In some cases, a proportion of less than 0.5% of dyes may be used to colour the strands of some products.
- The above ingredients are bonded together under heat and pressure. The process cures the resin.

3.) HAZARD IDENTIFICATION

OVERVIEW

Wood dust may be produced from machining the product and formaldehyde gas may be produced from heating the product.

DUST HAZARD:

Occupational exposure to wood dust from any timber has been classified as hazardous. Wood dust is classed as a known carcinogenic to humans and its inhalation over many years increases the risk of nasal cancers. Similar exposure to uncontrolled wood dust can lead to allergic reactions such as dermatitis, asthma or chronic eye, nose and throat irritation in some people. Common symptoms of wood dust irritation are nasal discharge, dry or sore nose/throat, blocked, bleeding or itchy nose, sneezing, catarrh or coughing.

EXPLOSION HAZARD:

Wood dust may spontaneously explode at high concentrations-in-air (>60g/m³) and ignite at temperatures greater than 204°C.

FORMALDEHYDE:

Formaldehyde gas may be released from the product under some conditions. However, in well ventilated areas the concentration of formaldehyde is unlikely to exceed the World Health Organisation Standard of 0.1 ppm for the general environment.

With the exception of those products manufactured for use in fire doors which are classified as E1, all other products are classified as E0 when tested in accordance with AS/NZS 4266.16:2004 Formaldehyde Emission - Desiccator Method, and many are classified as F☆☆☆☆ when tested in accordance with JIS A 5905:2003.

OTHER

With the exception of those products manufactured for use in fire doors, Triboard has been manufactured with polymeric diphenylmethane diisocyanate (pMDI) as a binder. This remains in the finished board in the form of polyurea or polyurethane. Evidence suggests that this causes no health effects in the normal population.

POTENTIAL HEALTH EFFECTS

Acute (short term) health effects

SKIN CONTACT:

Skin contact with wood dust and the cured resin may cause discomfort and irritation. Some individuals may experience an allergic response leading to reddening of the infected area and dermatitis.

EYE CONTACT:

Wood dust and resin cause discomfort and can be very irritating (e.g. splinter).

INHALATION:

Inhalation of wood dust and resin may be irritating to the nose, throat and lungs.

INGESTION:

Not considered to cause a problem in the unlikely event of this occurrence.

Chronic (long term) health effects

Repeated exposure to uncontrolled wood dust over many years increases the risk of nasal cavity cancer. Inhalation of wood dust may also increase the risk of lung fibrosis (scarring). There are also risks of respiratory and skin sensitisation from wood dust and resin, resulting in asthma and dermatitis respectively.

Wood dust has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic to humans.

Formaldehyde has been evaluated by the International Agency for Research on Cancer (IARC) as group 1, carcinogenic to humans and by the European Union (EU) as a category 3 carcinogen (possibly carcinogenic).

4.) FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing and wash before wearing again. Wash the affected skin area thoroughly with soap and water. Seek medical advice if skin reddening or irritation persists.

EYE CONTACT:

Dust should be removed by immediately holding the eye/s open and washing continuously for at least 15 minutes with fresh running water. Avoid rubbing the eye. Immediate medical attention should be sought if a wood sliver or splinter is lodged in the eye/s.

INHALATION:

Avoid the inhalation of dust generated when processing this product. The effects from dust exposure are generally considered to develop over the longer term. Remove to fresh air. If symptoms persist seek medical attention.

INGESTION:

Give at least 200mL of water. If any adverse reaction occurs, seek medical attention.

5.) FIRE FIGHTING MEASURES

GENERAL:

Triboard is flammable but moderately difficult to ignite. Avoid sources of radiant heat and naked flame. Avoid sparks and sources of ignition in dust extraction equipment.

The intact product and dust must not be burnt in barbecues, combustion stoves or open fires in the home, as irritating gases are emitted.

Burning or smouldering boards or dust can generate carbon dioxide, carbon monoxide, oxides of nitrogen, hydrogen cyanide and other pyrolysis products typical of burning organic materials.

EARLY FIRE HAZARD PROPERTIES: (AS/NZS1530:1999 PART 3)

| | |
|------------------------|----|
| Ignitability Index: | 14 |
| Spread of Flame Index: | 6 |
| Heat Evolved Index: | 5 |
| Smoke Developed Index: | 4 |

FLASHPOINT: >100C

AUTOIGNITION TEMPERATURE: Not Available.

EXTINGUISHING MEDIA: Water, foam, carbon dioxide or dry chemicals

FIRE FIGHTING PROCEDURES: Breathing apparatus recommended.

6.) ACCIDENTAL SPILL AND RELEASE MEASURES

EMERGENCY PROCEDURES: Not applicable.

7.) HANDLING AND STORAGE

HANDLING:

No special transport requirements are considered to be necessary

STORAGE:

Store in a well-ventilated, cool and dry area, away from sources of heat, flames or sparks. Do not store with oxidising or flammable materials.

8.) EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE STANDARDS

| | | |
|----------------------|-----------------|---|
| <u>Formaldehyde:</u> | Ceiling: | 1.0ppm (1.2mg/m ³) – NZ OSH |
| | ACGIH TLV: | 0.3ppm |
| | NIOSH REL TWA: | 0.016ppm |
| | NIOSH REL STEL: | 0.1ppm |

| | | |
|---------------------------------|----------|---------------------|
| <u>Wood Dust:</u> (Softwood) | Ceiling: | 5mg/m ³ |
| | STEL: | 10mg/m ³ |

REDUCING EXPOSURE

- ❑ When handling Triboard, wear gloves to avoid splinters and sharp edges. Use a disposable dust mask (AS1715-1982 Class L or Class M) and eye protection when sanding or sawing. Wear clean work clothing and maintain good personal hygiene. Avoid repeated and prolonged inhalation of dust or skin contact. Do not smoke whilst handling Triboard.
- ❑ Sawing and sanding equipment should be fitted with suitable dust extraction equipment.
- ❑ Workers who are involved in processing Triboard should have regular lung function tests conducted. Prospective workers should have a lung function pre-employment check and questioned on their possible allergy to wood dust or formaldehyde.
- ❑ To minimise formaldehyde emissions, all exposed surfaces and edges should be sealed with a coating, such as polyurethane, water based or alkyd paint.
- ❑ If you experience adverse reactions to formaldehyde, you may want to avoid the use of reconstituted wood products and other formaldehyde emitting products.
- ❑ Increasing the rate of ventilation in a building will help reduce formaldehyde levels. The use of dehumidifiers and air conditioning to control humidity and maintain a moderate temperature can help reduce formaldehyde emissions.
- ❑ Storage and work areas containing large quantities of Triboard should be adequately ventilated as specified by the Building Research Association of New Zealand (BRANZ).
- ❑ Where Triboard is used in the construction of a building, adequate ventilation and room air exchanges should be maintained in accordance with Building Research Association of New Zealand (BRANZ) recommendations.

NOTE

Other sources of formaldehyde are also present in buildings, such as from durable press curtains, wallpapers, carpets, tobacco smoke, furniture, foam insulation.

9.) PHYSICAL PROPERTIES

| | |
|------------------------------------|-----------|
| DENSITY (kg/m³): | 400 – 800 |
| MOISTURE CONTENT: | 5 – 12% |

10.) STABILITY AND REACTIVITY

CHEMICAL STABILITY: These products are chemically stable under normal conditions.

REACTIVITY: These products are not reactive.

11.) TOXICOLOGICAL DATA

Any health hazards associated with these products have been evaluated on the basis of the individual ingredients, and these hazards should be assumed to be additive.

The hazards described in this document have been evaluated based on a threshold of 1.0% for all hazardous ingredients and 0.1% for carcinogens.

ACUTE EFFECTS

The dust, which may be generated during manual or mechanical cutting, drilling, sanding or other abrading processes, and the smoke generated by heating or laser cutting, may cause temporary irritation of the eyes and upper respiratory system. The symptoms are expected to subside after exposure has stopped and are not expected to cause any long term effects. Allergic skin and lung reactions have been reported with exposure to various wood panels dusts due to the chemicals presented in wood and cured resin. These rashes resemble other allergic skin reactions caused by plants, and usually heal rapidly.

CHRONIC EFFECTS

The risk of nasal cancer has been associated with wood dust exposure. In the 1960s, studies linking wood dust exposure in the furniture industry with nasal cancer, were first reported in England. The link was confirmed in several other European countries and furniture industries. The studies showing a link to nasal cancer have been primarily conducted in industries using hardwood. The International Agency for Research on Cancer (IARC) evaluated dusts from both hardwood and softwood in 1995 and concluded that: "there is sufficient evidence in humans for the carcinogenicity of wood dust. There is inadequate evidence in experimental animals for the carcinogenicity of wood dust. Wood dust is carcinogenic to humans (Group 1)".

The IARC also evaluated formaldehyde in 1955¹ and concluded that: "There is *limited evidence* in humans for the carcinogenicity of formaldehyde; there is *sufficient evidence* in experimental animals for the carcinogenicity of formaldehyde; and that overall, formaldehyde is *probably carcinogenic to humans (group 2A)*". The IARC again evaluated formaldehyde in June 2004² and concluded that: "*there are adequate data available from humans for an increased risk of nasopharyngeal cancer*" and that formaldehyde should now be classified as Group 1, carcinogenic to humans.

Whilst this wood panel product contains less than 0.01% free formaldehyde, people using the product may be exposed to low concentrations of formaldehyde if the boards are heated (as in laminating), are cut by laser cutting machines, and/or dust particles come in contact with the moist mucous membranes lining the upper respiratory tract. Extensive literature searches and research carried out by independent occupational and environmental health specialists has not indicated any risks over and above those associated with wood dust without binder. This research includes that 1999 formaldehyde risk assessment carried out by US scientists in collaboration with the US EPA and Health Canada. The risk assessment concludes that if a non-smoking worker were exposed to 0.004 ppm of formaldehyde continuously for 80 years, and also to 0.1 ppm for 40 years at work, then the predicted additional risk of respiratory tract cancer would be 4.1 per 1,000,000,000. The controls needed for minimizing the potential for formaldehyde exposure from this product will be the same as those for control of dust exposure. These risk assessments and conclusions are in no way altered by the reclassification of formaldehyde to Group 1 by the IARC.

References

1. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 62: Wood dust and formaldehyde. IARC, Lyon, France. 1995.
2. IARC Press Release No. 153, 15 June 2004. IARC, Lyon, France.

12.) ECOLOGICAL INFORMATION

ECOTOXICITY

These products should only be used for their designated purposes.

13.) DISPOSAL CONSIDERATIONS

Dispose of in an approved waste disposal facility and in accordance with local regulations.

14.) TRANSPORT INFORMATION

These products are not regulated as a dangerous good and no special transport requirements are necessary.

15.) OTHER REFERENCES AND OTHER READING

- Occupational Safety and Health Service of the Department of Labour (New Zealand): Workplace Exposure Standards 1994.
- Working Safely with Wood Panel Products: Prepared with the assistance of the Department of Labour Occupational Safety and Health.
- Health and Safety in Employment Act 1992.
- Formaldehyde and Wood Dust
Update Bulletin
Issue No. 29, October 2000
Drs. David and Ki Douglas (Douglas Consulting Australia)
- Working Safely with Wood Panel Products.
Compiled by the New Zealand Wood Panel Manufacturers Association – 2001
- Home Health – Facts about Formaldehyde in Wood Composite Products.
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