

NATIONAL HAZARDOUS SUBSTANCES REGULATORY PACKAGE

Substances Subject to Prohibitions on Use (Schedule 2)

***AN AMENDMENT TO SCHEDULE 2 OF THE NATIONAL MODEL REGULATIONS FOR
THE CONTROL OF WORKPLACE HAZARDOUS SUBSTANCES [NOHSC:1005 (1994)]***

Seal of NOHSC

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TITLE

1. This amendment may be cited as an *Amendment to Schedule 2 of the National Model Regulations for the Control of Workplace Hazardous Substances (Prohibition of Asbestos)* as gazetted on 28 November 2001. Schedule 2 is further amended by the introduction of a National List of Exemptions.

OBJECTIVE

2. The objective of these amendments is to:

- (a) introduce a prohibition on the use of chrysotile asbestos in Australia with effect from no later than 31 December 2003; and
- (b) consolidate current asbestos prohibitions and amend Schedule 2 further, by including the National List of Exemptions from the chrysotile prohibition.

AMENDMENTS

3. Insert the following entry into Schedule 2 of the *National Model Regulations for the Control of Workplace Hazardous Substances [NOHSC: 1005 (1994)]*:

Chrysotile asbestos [Chemical Abstract Number 12001-29-5] (white asbestos) – all uses from 31 December 2003, including the replacement of chrysotile products when replacement is necessary, except:

- for bona fide research or analysis;
- when handled for storage awaiting disposal;
- for removal or disposal; or
- where encountered during non-asbestos mining

The prohibition does not extend to the removal of chrysotile products *in situ* at the time prohibition takes effect.

National List of Exemptions from the chrysotile prohibition

Exemption 1: Compressed asbestos fibre gaskets for use with saturated steam, superheated steam, or with substances, which are classified as dangerous goods, incl. corrosive or flammable, and very toxic or toxic. Where compressed asbestos fibre gaskets are to be used with chlorine, the exemption applies for plants used in liquid chlorine service with design process conditions of –45 degrees Celsius and 1500 kPa pressure.

Exemption until 31 December 2004 and, for use with chlorine, 31 December 2006.

NOTES:

- (i) Compressed asbestos fibre (better known as CAF), which is asbestos in a mixture of natural or synthetic rubber compounds and fillers, is a common component of gaskets although its use is gradually being superseded, mainly by polytetrafluoroethylene (PTFE) aramid fibre and compressed graphite. CAF gaskets or joint rings are used for sealing the joints that connect pipe work, vessels and equipment which handle, process, transfer and store chemicals. There is also similar use in non-chemical industries. The joint (or flange) is usually circular; the CAF gasket, which is typically between half an inch and 24 inches in diameter, is compressed between 2 flanges by tightening bolts around the flange circumference. In order to provide a total seal, the gasket has to be resilient to the compression forces without unacceptable deformation, and to the expansion and contraction effects of temperature changes. It must also be able to resist chemical attack, which would weaken the joint, and be able to withstand the forces arising from the high pressures of many chemical processes. In effect, the gasket must have the same containment

integrity as the pipe work and vessels. This is particularly vital where dangerous, toxic or flammable materials are being handled, in order to ensure the protection of people and the environment. The exemption is therefore, limited to circumstances where such substances, including saturated and superheated steam, are being held in vessels or transferred along pipes.

- (ii) The United Kingdom exemption for this product under these conditions does not extend to spiral wound gaskets with an asbestos filler, or to valve packings. It does, however, extend to certain gaskets used in vehicles, such as cylinder head gaskets and exhaust gaskets where the substances contained fit the definition of the exemption, eg flammable or toxic.

Exemption 2: Any product consisting of a mixture of asbestos with a phenol formaldehyde resin or with a cresylic formaldehyde resin used in:

vanes for rotary vacuum pumps;

vanes for rotary compressors; or

split face seals of at least 150 millimetres in diameter used to prevent leakage of water from cooling water pumps in fossil fuel electricity generating stations.

Exemption until 31 December 2007.

NOTES:

- (i) These products comprise asbestos textile and a phenol formaldehyde resin. Similar products use cresylic and silicon resins. The asbestos textile comprises a minimum of 90% chrysotile, the remaining 10% being either rayon, viscose or polypropylene. The whole composite is approximately 60% textile and 40% resin.
- (ii) In rotary vacuum pumps and compressors, the sliding rotor vane is the crucial moving component which sweeps the air within the pump to provide vacuum or compression. Rotor vanes are used in machines in agriculture and sewage treatment, as well as in certain other industrial applications. They are subjected to temperatures of up to 230°C and to pressures of several bar. Substitute products have been prone to failure in the past leading to accidental spillages of agricultural products and sewage.
- (iii) The exemption for split-face seals is limited to specific use in power stations. Premature failure of the seals could result in shut down of cooling water pumps and pump/turbines in fossil-fuelled power stations and pumped storage hydro-electric power generating stations respectively, which could affect power output particularly from the hydro stations used in the key role of balancing electricity supply against demand.

Exemption 3: Diaphragms for use in electrolytic cells in existing electrolysis plants for chlor-alkali manufacture.

Exemption until 31 December 2006.

NOTES:

- (i) Chlor-alkali products are chlorine, caustic soda and hydrogen. The manufacturing process involves the electrolysis of brine (sodium chloride solution) in electrolytic cells. One of the 3 manufacturing processes currently operated uses chrysotile asbestos diaphragms to separate the highly reactive reaction products from each other; the diaphragm is the key to the safety of the process. Alternatives to chrysotile in these diaphragms have not yet been adequately tested, and in view of the hazardous nature of the process (with the risk of possible explosion), it is safer to persist in the use of chrysotile.
- (ii) Each diaphragm consists of about 75kg of chrysotile in a blend of different fibre lengths. The final diaphragm, as used, is in the form of a compact layer, about 3mm in thickness, of chrysotile fibres spread uniformly over a woven steel mesh. The diaphragm area is about 50m².
- (iii) In accordance with the Principles for Exemptions, the need to renew this exemption will be reviewed prior to the expiration date of 31 December 2006.

Exemption 4: For the Australian Defence Organisation to use chrysotile parts and components which the ADO considers to be mission-critical, and where there is no known suitable, non-chrysotile alternative. This exemption will be regulated in detail by the Safety Rehabilitation Compensation Commission.

Exemption until 31 December 2007.

NOTES:

- (i) The definition of mission-critical encompasses those items that, if not available, prevent the equipment they are a component of from being available for use, and this unavailability prevents a mission from being undertaken.