RioTinto

HSEC-B-07

Group Standard

H1 - Chemicals and hazardous substances exposure control

<table>
<tr><td rowspan="4">Group
standard</td><td colspan="4">Title: Chemicals and hazardous substances exposure control</td></tr>
<tr><td colspan="4">Function: Health, Safety, Environment and Communities (HSEC)</td></tr>
<tr><td colspan="4">No. of Pages: 5</td></tr>
<tr><td>Approved :
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B1 Particulate and gas / vapour exposures (2009);
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<tr><td colspan="2">Owner:
Global head of Health, Safety,
Environment and Communities</td><td colspan="2">Approver:
Executive Committee</td><td>Target Audience:
All Rio Tinto staff and each Rio Tinto Group business and function</td></tr>
<tr><td colspan="5">Direct Linkages to other relevant Policies, Standards, Procedures or Guidance notes:

Rio Tinto management system, Workplace health exposure monitoring Group procedure, Health and medical monitoring Group procedure, Manage protective equipment Group procedure, E15 Environment standard: Hazardous materials and non-mineral waste control and minimisation.</td></tr>
<tr><td colspan="5">Document purpose:

To support implementation of the Group Occupational Health and Safety policy. It defines the minimum acceptable requirements for behaviours and/or conditions in respect of managing the potential for occupational health, safety and/or environment impacts associated with chemicals and hazardous substances, which, if not met, could materially impact the Group.</td></tr>
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H1 - Chemicals and hazardous substances exposure control

Intent and scope

This standard applies to employees and contractors working at all Rio Tinto business units and managed operations, through all stages of their lifecycle from exploration through to closure.
It covers workplace hazard identification, exposure evaluation and control of dangerous goods and hazardous substances, as defined in GHS (Globally Harmonised System) requirements, which are transported, used or made by our business. The focus of the standard is on controlling inhalation as the main path of exposure to dust, fibre, mist, fume, gas or vapour. However the risk from other paths of entry must also be considered.
The intent is to:

- Reduce exposures to hazardous substances to prevent occupational illness.
- Reduce health, safety and environmental risks due to the release of hazardous substances.
- Assist compliance with local legal requirements and industry standards.

This standard is risk based and applies where there is a high or critical risk of harmful effect. It also applies where a relevant occupational exposure limit (OEL) is exceeded.

Rio Tinto OELs are documented in the Workplace health exposure monitoring Group procedure.

Control requirements

Requirements in this standard apply in addition to any defined in the Rio Tinto management system.

Planning

1.1 A register of hazardous substances / dangerous goods that are approved for use must exist for each operation. It must be maintained to control the purchase and introduction of new substances, and exclusion of substances no longer in use, including those brought in by contractors or visitors.

1.2 Properties of all substances (including their process intermediates, by-products and wastes) must be documented and integrated into procedures where exposure to their properties presents a high or critical risk.

1.3 Agents known or suspected to cause cancer, change the genetic DNA or harm the reproductive process of humans must be controlled to as low as reasonably practicable (ALARP). This may be lower than the occupational exposure limit (OEL). Action plans for treating these risks must be developed and then reviewed at least annually.

1.4 There must be a process to assess safer options to current hazardous substances based on a risk assessment for health, safety or environmental hazards.

1.5 There must be a process to reduce the number and amount of hazardous substances to necessary quantities for justifiable use.

1.6 There must be design criteria to reduce hazardous substances exposure risk for the purchase or build of new fixed and mobile workplace equipment. This also applies to changes to existing equipment.

1.7 Defined areas or tasks requiring use of respiratory protection must be created where it is likely that:

a) a similar exposure group's (SEG's) exposure to agents that result in long term health effects (chronic effects) exceeds the relevant OEL; or

b) fifty per cent of the relevant OEL is exceeded for agents that can have an effect after a short time of exposure (acute effect). This includes particulate hazards, or gases or vapours.

Implementation and operation

Safety data sheets (SDS)

1.8 A legally compliant SDS must be available prior to the delivery and use of a hazardous substance.

1.9 SDS, or equivalent hazard document, for products and process or waste materials sent off site must:

a) be sent to customers and recorded on the operation's register of hazardous substances;
b) comply with local regulatory requirements and the requirements of the country or location to which the product is shipped; and
c) be reviewed at least every five years, or as necessary.

1.10 SDS or a computer database containing SDS must be readily available to all workers with potential for exposure to hazardous substances and to other affected parties. They must be in the language(s) commonly used at the operation.

1.11 SDS must be used to support risk assessments to determine the need for workplace monitoring, medical surveillance, and controls for safe transport, storage, handling and use of hazardous substances / dangerous goods.

Hazardous substances management

1.12 Written procedures for the use, storage and disposal of hazardous substances with a health, safety or environment risk classification of critical must exist and be internally audited at least annually.

1.13 Storage areas must be secure and protect chemical containers from physical damage due to temperature extremes, moisture, corrosive mists or vapours, and vehicles. They must be designed for easy access for fire-fighting and to address the potential for explosive dusts.

1.14 Hazardous substances must be stored and segregated based on:

a) quantity of materials stored;
b) physical state of the chemicals (solid, liquid or gas);
c) degree of incompatibility; and
d) known behaviour of the materials.

1.15 Storage containers must be fit for purpose and clearly labelled to indicate contents, safe handling requirements and expiry date, where relevant. Pipes or other supply systems used for hazardous substances must be clearly identified. The direction of flow must be marked.

1.16 Prior to disposal, empty containers/equipment must be decontaminated.

1.17 Emergency showers, eye-wash stations and first aid kits must be available where required by law, or where their need is indicated by risk assessment. They must be appropriately located, maintained and signposted. Workers must be aware of their location and trained to use them.

1.18 Surface areas of buildings and equipment must be adequately cleaned to avoid:

a) toxic dust generation due to material being dislodged (e.g. wind-blown), where practicable; and

b) fume generation from collected toxic dust during welding/heating or cutting operations.

1.19 Where a risk assessment indicates the need to reduce exposures to toxic agents for workers or their families, a programme of good personal hygiene must be enforced and include:

a) no smoking, eating or drinking in designated hazardous areas;

b) washing of hands and face prior to drinking, eating or smoking;

c) showering at work post shift or after exposure to contaminating conditions; and

d) no contaminated clothing to be worn off site.

Personal protective equipment (PPE)

1.20 PPE is the last resort as a control option. Skin protection and respiratory protection devices (RPDs) must be selected, used, stored, maintained and reviewed according to the requirements of the Manage protective equipment Group procedure.

Only operation-approved PPE shall be used and suitable facilities must be available for cleaning and clean storage of RPDs, where applicable.

1.21 Defined respiratory protection areas must:

a) be identified and signposted or otherwise clearly communicated to those working in the area; and

b) have a documented respiratory protection programme.

1.22 Where a negative or neutral pressure RPD is used to provide protection against hazardous exposures, the wearer must be clean shaven. They must be fit tested for the RPD by a competent person, using an industry recognised standard. Testing must be repeated periodically according to local legal requirements or at a minimum every two years. Positive pressure RPD must be used when an individual is not clean shaven or where a successful fit test with a negative pressure RPD has not been achieved.

1.23 For air-supplied RPDs, breathing air must be filtered and / or isolated from plant or instrument air and from sources of potential contaminants. The quality of the breathing air must be checked periodically to make sure it meets local legal requirements or international standards.

Fibrous materials management

1.24 At a minimum, asbestos and high bio-persistent non-asbestos fibrous silicates must be managed according to local legal requirements or consistent with International Standards and meet the following requirements:

a) there must be a documented programme to manage these materials;

b) no new products containing asbestos shall be purchased. The purchase and use of high bio-persistent non-asbestos fibrous silicates should be limited wherever practicable;

c) installed materials of this type must be identified and assessed, based on risk of deterioration. Where ‘safe in place’, they should not be removed, unless there is an opportunity or legal requirement for removal during renovation or construction of buildings or equipment;

d) contractor bid specifications for asbestos removal must be consistent with the requirements of management system Element 7; and

e) where it is reasonably likely that a worker has been exposed to asbestos fibres in air greater than 50 per cent of the OEL, details of the exposure must be recorded on their medical file.

1.25 The potential for occurrence of naturally occurring fibrous asbestiform materials in exploration or mining production activities must be assessed by a competent person. Where the potential for air-borne exposure is identified, controls must be in place.

1.26 Maintenance operations must be made aware of potential cristobalite exposure hazards, particularly when disturbing high temperature affected refractory ceramics.

Monitoring

1.27 Monitoring must meet the Workplace health exposure monitoring Group procedure. It must consider all routes of potential exposure, including via breathing in or swallowing the hazardous substance, as well as via the skin.

1.28 Exposure data must be statistically valid and monitoring frequency must be based on risk assessment for agents that:

- are known or suspected to cause cancer, or
- change the genetic DNA, or
- harm the reproductive process of humans, or
- cause progressive chronic conditions to worsen.

1.29 Fixed station or personal monitors and alarms must be used to warn against the presence of or release of toxic gases or vapours that may cause health effects in less than one shift (eg confined space entry). Personnel who may be affected must be trained in the use of the monitors and monitoring must be performed as long as the potential for harm exists.

1.30 Medical surveillance and / or biological monitoring programmes that are consistent with the Health and medical monitoring Group procedure must be used when:

a) the SEG average exposure to airborne agents that result in long term health effect is greater than 50 per cent of the OEL; or

b) recommended by the medical adviser; or

c) there is a legal requirement.