Production Safety Standards

Isocyanates Management Standard

Document PSS06-1 Rev 0

17/04/2025

Record of Revisions

The following tabulation provides information on the latest revision to this standard.

Date	Description of Revision	Rev
	This is the initial release of document PSS06-1, Isocyanate Management Standard.	0

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1 INTRODUCTION

1.1 Purpose

This procedure is designed to manage the use of substances containing isocyanates on production workspaces. It aims to safeguard all crew by prioritising alternative materials, ensuring risk assessments are followed, and maintaining appropriate communication with the Production Safety Supervisor and Production Management team. This procedure follows the principles of the Hierarchy of Controls to minimise exposure risks, with a preference for elimination and substitution of hazardous substances wherever feasible.

This document is aligned with the Production Safety Manual.

1.2 Scope

This procedure applies to all productions that may use of paints, foams, adhesives, or other materials containing isocyanates or volatile organic compounds (VOCs). It encompasses risk assessment, management of control measures, use of Personal Protective Equipment (PPE), and necessary health surveillance measures.

2 REFERENCES

2.1 Reference Documents

The following is a list of reference documents related to PSS06-1 Isocyanates Management Standard.

Reference Documents	
Document Number	**Title**
PSSFRM06-1	COSHH Assessment Template
N/A	HSE Website – Construction hazardous substances: Isocyanates
G408	Urine sampling (biological monitoring) for isocyanate exposure measurement
N/A	Biological Monitoring for Isocyanates

3 MANAGEMENT SYSTEM

Isocyanates may pose significant health risks, including asthma, sensitisation, and other long-term health effects. Productions should only consider using substances containing isocyanates if a safer, less harmful alternative cannot be identified or procured. This approach adheres to the Hierarchy of Controls, which prioritises the following measures in order of consideration:

1. **Elimination**: Remove the hazard entirely.
2. **Substitution**: Replace the hazardous substance with a less harmful alternative.
3. **Engineering Controls**: Implement physical measures, such as local exhaust ventilation (LEV) or designated spray booths, to control exposure. Washing Facilities.
4. **Administrative Controls**: Implement safety procedures, training, and supervision to reduce the risk of exposure.
5. **PPE**: Use appropriate PPE as a last line of defence to protect crew members.

Productions using materials containing isocyanates **MUST**:

- **Elimination and Substitution**: Ensure that no isocyanates are used unless all alternative, less harmful substances have been exhausted, following the hierarchy of controls.
- **Notification**: Notify the Production Safety Supervisor and Production Management Team before any use of isocyanates.
- **Risk Assessment and Control of Substances Hazardous to Health (COSHH) Register**: Complete a thorough risk assessment and log all isocyanate-containing substances in the COSHH register. The assessment must justify the use of isocyanates only after confirming that elimination or substitution is not feasible.
- **Health Surveillance**: Implement health surveillance measures (spirometry, audiometry, biological testing) if identified as necessary by the risk assessment and notify the Production Team of the testing vendors. Health surveillance should include health surveillance questionnaires and spirometry testing.
- **PPE**: Provide and ensure proper use of PPE, including air-fed respiratory equipment, during any handling of isocyanates. Monitoring of PPE will be the responsibility of the individual department, but safety teams will be allowed to ensure monitoring is taking place.
- **Training**: Ensure all crew members are appropriately trained on the hazards, handling procedures, and emergency protocols related to isocyanates.
- **Review:** Review all arrangments made on a regular basis, ensuring legal compliance and that controls are fit for purpose.

Failure to comply with these requirements can result in serious health risks and breaches of safety regulations. Strict adherence is mandatory to protect all personnel involved. Non-compliance may result in disciplinary actions in accordance with HR procedures.

3.1.1 Health Surveillance

When a risk assessment indicates that health surveillance is necessary due to exposure to isocyanates, the hierarchy of health surveillance must be followed to monitor and mitigate health risks. Health surveillance is different from general health screening or promotion and is required only when there is a measurable residual risk and a method to assess health impacts. The hierarchy includes the following steps:

- Establish a Health Record: A confidential health record must be maintained, accessible only to health professionals, to be initiated within the production.
- Self-report Symptoms: Crew members must be trained on which symptoms to report (e.g., respiratory issues) and to whom.
- Inspection: A designated responsible person within the department and must periodically check on Crew to ensure early detection of any adverse health effects.
- Questionnaire: Crew should periodically complete health questionnaires relevant to the risk, focusing on early symptoms of exposure, this should be managed within the department in conjunction with the safety department.
- Special Tests: Where appropriate, special tests such as spirometry, audiometry, or biological monitoring (e.g., urine tests for isocyanate exposure) can be conducted. Any such testing is subject to informed consent. As per HR guidance on informed consent.
- Examination by a Doctor or Nurse: Medical professionals may need to examine Crew if exposure levels or health concerns indicate this is necessary.

Health surveillance is essential when:

- A disease is associated with the substance in use (e.g., asthma from isocyanates).
- The disease or adverse change can be detected in its early stages.
- Workplace conditions make it likely that the disease will occur.
- **PPE**: Provide and ensure proper use of personal protective equipment (PPE), including air-fed respiratory equipment, during any handling of isocyanates.
- **Training**: Ensure all crew members are appropriately trained on the hazards, handling procedures, and emergency protocols related to isocyanates.

Failure to comply with these requirements can result in serious health risks and breaches of safety regulations. Strict adherence is mandatory to protect all personnel involved. Non-compliance may result in disciplinary actions in accordance with HR procedures.

4 PROCEDURE

4.1 Alternative Substances

- **Elimination and Substitution**: Before any production uses materials containing isocyanates, the department must demonstrate that elimination or substitution with a less harmful substance is not feasible. Elimination or substitution, where possible, is preferred as it removes or reduces the hazard at its source, aligning with the Hierarchy of Controls.
- **Consultation**: Departments should consult Safety Data Sheets (SDS) and refer to COSHH guidelines to verify available alternatives before proceeding with the use of isocyanates.

4.2 Notification Requirements

- **Production Safety Supervisor and Production Management Team Notification**: If a department plans to use any materials containing isocyanates, the Production Safety Supervisor and Production Management Team must be informed immediately. The Production Management Team will need to approve the use, considering health and safety implications.

4.3 Risk Assessment and COSHH Register

- **Risk Assessment**: Any department intending to use isocyanates must conduct a comprehensive risk assessment following COSHH regulations. The risk assessment should consider potential exposure routes and associated health risks, and must include:
    - Evaluation of all potential hazards, routes of exposure, and control measures required.
    - Health surveillance requirements and criteria for determining the need for ongoing monitoring.
- **COSHH Register**: Ensure that all substances containing isocyanates are logged in the production's COSHH register. The COSHH register must include details on how to handle, store, and dispose of these materials safely.

4.4 Health Surveillance

- **Monitoring Requirements**: If the risk assessment indicates potential exposure to isocyanates, health surveillance measures such as spirometry, audiometry, and biological testing shall be implemented.
- **Vendor/Clinic Coordination**: If health surveillance or testing is required, the department must notify the production team of the vendor/clinic used for testing, ensuring all personnel are informed of testing dates and requirements.
- **Follow-up and Reporting**: Results from health surveillance should be communicated to the Production Safety Supervisor, Production Management Team, and relevant management. Any actions required to reduce risk should be taken immediately.
- **Monitoring Requirements:** If the risk assessment indicates potential exposure to isocyanates, health surveillance measures shall include **spirometry testing, health surveillance questionnaires,** and biological testing.
- **Positive Result Protocol:** If biological testing indicates a positive result for isocyanate exposure, **work in the affected area must cease immediately**. The production must

then **conduct an investigation** to identify and mitigate the hazard before resuming activities in that area.

4.5 Personal Protective Equipment (PPE)

- **PPE Use**: Appropriate PPE, such as air-fed respiratory protective equipment (RPE), must be used inside spray booths or rooms when handling isocyanates. PPE must meet relevant EN standards or other local standards as applicable.
- **PPE Maintenance**: Regular checks and maintenance must be in place for all PPE used during the handling of isocyanates to ensure ongoing effectiveness.
- **Face fit testing:** Face fit testing must be conducted for all personnel using respiratory protection equipment.

4.6 Training

- **Crew Training**: All crew members using or exposed to isocyanates must receive departmental training. Training must cover the hazards, safe handling, use of PPE, emergency procedures, and proper disposal methods. Training records should be maintained as per the risk assessment standard.

5 MONITORING AND REVIEW

This procedure must be reviewed periodically to ensure compliance with updated safety regulations and practices. The Production Safety Supervisor is responsible for monitoring adherence to this procedure and updating it as necessary.