Strengthening the Management of Hazardous Waste with Singapore Standard

Hazardous waste is generated from industrial, institutional and other work activities. The safe management of hazardous waste is an integral component of a total environmental, health and safety management programme.

When waste is mismanaged, it can result in adverse impacts to safety, health or the environment, including land, air and water pollution, fires and explosions and poisoning of humans.

It is especially crucial to manage the waste properly at every stage of its life cycle to reduce accidents. Proper waste management comprises appropriate, environmentally sound and safe practices.

Objective of SS 603

SS 603:2021 *Code of practice for hazardous waste management* sets out the procedures for an integrated approach to safe hazardous waste management, which include the key requirements for the collection, transportation, storage, treatment and disposal of hazardous waste.

SS 603:2021 is a revision of SS 603:2014 and comprises improvements made to terms and definitions, roles, responsibilities and auditing requirements.

From a business perspective, there are numerous benefits to developing a robust hazardous waste programme that adopts SS 603:2021. The following case studies present some of these business benefits.

General Benefits of Adopting SS 603

- Implement an effective hazardous waste management system
- Improve environment, health and safety (EHS) as well as EHS capabilities
- Improve compliance with laws and regulations
- Increase productivity and enhance overall business operations
- Enhance social responsibility goals

CASE STUDY #1 ARLANXEO Singapore

Established in April 2016, ARLANXEO is a wholly owned subsidiary of Saudi Aramco. As one of the world's largest synthetic rubber manufacturers, ARLANXEO develops, produces and markets high-performance rubbers used in a wide range of applications – from the automotive and tyre industries to the electrical, construction and oil and gas industries.

Adopting SS 603

ARLANXEO Singapore adopted SS 603 in 2022.

Julian Soong, Managing Director of ARLANXEO Singapore & General Counsel APAC, says: "SS 603 has enhanced our hazardous waste management system by enabling us to work effectively with our appointed licensed toxic industrial waste collector (TIWC). When everyone is on the same page and speaking the same language, we can achieve better safety and health together throughout the waste management process."

Benefit of SS 603: Enhance Collaboration with TIWC for Business Continuity

Licensed TIWCs are heavily involved in any organisation's hazardous waste management process from collection to disposal. They receive toxic industrial waste for storage, reprocessing, usage, treatment and disposal.

With SS 603, ARLANXEO Singapore has a clear list of guidelines to work more effectively with its TIWC. These guidelines include implementing handling and storage measures, assessing treatment and disposal options, developing a facility management programme, conducting risk assessments and more.

STAFF STRENGTH
200 (Singapore office)

INDUSTRY
Energy and chemicals

CORE ACTIVITY
Manufacturer of synthetic rubber products

A recent audit session, where ARLANXEO Singapore staff and the TIWC meet to discuss improvements in hazardous waste management.

Stewart Wee, Site Manager of ARLANXEO Singapore, says, “It is vital that we ensure our TIWC is functioning well. When the TIWC is unable to collect hazardous waste, it will not only lead to operational safety risks but also disrupt our production and affect our business. That is why adopting SS 603 to strengthen our collaboration with our TIWC has been essential for us.”

SS 603 also sets out robust auditing requirements that assist ARLANXEO Singapore and its TIWC in identifying potential gaps at their sites.

“Through the SS 603 auditing protocols, we exchange constructive feedback with each other for continual improvement in our safety management, culture and awareness,” Soong adds.

Container with hazardous waste at a demarcated loading bay with a large Transport Emergency Information Panel for clear communication

CASE STUDY #2 ISCE²

The Institute of Sustainability for Chemicals, Energy and Environment (ISCE²), a part of the Agency for Science Technology and Research (A*STAR), was established in March 2022 to achieve Singapore’s climate change goals by advancing R&D in areas such as low-carbon technologies, carbon life cycle assessment, sustainable materials and green manufacturing processes using the latest digitalisation and automation tools.

STAFF STRENGTH
250

INDUSTRY
Energy and chemicals

CORE ACTIVITY
R&D in sustainable materials

Adopting SS 603

ISCE² adopted SS 603 in 2022.

Ng Jun Wei, Division Director, ISCE², says: “We made adopting SS 603 a priority to ensure the safety of staff handling hazardous waste from our R&D activities. Equally important is how SS 603 aligns with our vision as an institute for sustainability. The standard helps us to develop an environmentally responsible approach to hazardous waste management.”

Benefit of SS 603: Reduce Wastage, Improve Sustainability

SS 603 introduces a waste management hierarchy that recommends the order in which waste management options should be considered. The order of priority in dealing with hazardous waste is to first reduce, followed by reusing/recovering, recycling, treating and finally disposing.

By following this order, organisations can minimise adverse health, safety and environmental effects from waste and optimise resource efficiency in their waste management process.

A chemical identified through the Chemical Sharing Programme is passed to a researcher.

Motivated by this waste management hierarchy, ISCE² initiated its Chemical Sharing Programme in 2023. Ng says, “The objective of this programme is to foster a culture of sharing resources to reduce wastage – including hazardous waste – and optimise lab storage space. The programme follows SS 603’s waste management hierarchy and drives the use of existing chemical inventory towards more responsible practices in the research community.”

By going beyond the regulations to incorporate sustainability in its waste management system, an organisation can reap numerous benefits such as reducing costs, managing environmental risks, demonstrating good leadership and governance and increasing investor interests.

Ng adds, “SS 603 transcends mere compliance with regulations. In fact, SS 603 can also be a strategic tool for organisations that want to prioritise their commitment to sustainability.”

An ISCE² staff places a hazardous waste carboy into a storage cabinet for proper disposal. The carboy is labelled clearly based on SS 603 practices for clear communication to relevant stakeholders, including the TIWC.