

THE
**COLOURED GEMSTONES
WORKING GROUP**



Health and Safety
Management

GUIDANCE

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TDi

Sustainability

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Introduction to this Guidance

This Guidance has been developed to accompany you along the process of integrating a proper health and safety system within your business to help prevent, manage and mitigate health and safety hazards.

This Guidance includes:

- **A brief explanation** of the topic of Health and Safety and its relevance in the gemstones and jewellery industry;
- **A description of the key steps** that you can take in order to integrate good practices within your business in to prevent, manage and mitigate health and safety hazards; and,
- **A glossary** containing an explanation of key terms (highlighted in yellow) relating to this topic.

Explanation of Health and Safety

Workplace safety is very important for each and every worker, in every sector. Although legal requirements may change across jurisdiction, it is likely that wherever you are based, you have legal requirements related to **health and safety**. Employers have a duty to protect the health, welfare and safety of their **workers** and other people who might be affected by their business. Failure to implement health and safety management can have very serious consequences, in some cases leading to injury and death. Some of the worst health and safety failures have catastrophic and long-lasting effects. Business owners, managers, and anyone in a position of responsibility who breaches health and safety laws can face criminal charges, with hefty fines or even a prison sentence. It is imperative that those involved with- and those affected by- your business can trust that your company is a safe place of work.

Although they may vary, health and safety concerns are present throughout the entire jewellery supply chain, for businesses of all sizes.

Below are some common health and safety **hazards** prevalent throughout the jewellery and gemstone supply chain, from mine to market (please note, this list is not exhaustive):

- Excessive noise levels: noise over 85 decibels, mainly from mining equipment, can cause long-term and irreversible damage to hearing;
- Accidents and injuries caused by the use of Earth-moving equipment;
- Accidents and injuries caused by the use of toxic chemicals and explosives;
- Weather hazards, including flooding;
- Silicosis: a long-term disease of the lungs cause by inhaling large amounts of crystalline silica dust, which is found in certain stones, clays and rocks and released during the cutting, grinding and polishing process;
- Eye fatigue during the cutting and polishing process;
- Accidents and injuries caused by machinery; and,
- Building and fire safety.

FOCUS ON SPECIFIC HAZARDS THROUGHOUT THE GEMSTONE AND JEWELLERY SUPPLY CHAIN

Flooding (Mining)

Flooding is a serious hazard, specifically within the artisanal and small-scale mining sector. The risk of flooding to underground and above-ground mining operations can result from ingress of ground water or from uncontrolled surface run-off, such as flash flooding after heavy rains. Flooding can destabilize pit walls, resulting in mine collapse, damage to heavy machinery and loss of life. For example, in 2008, a flood in a Tanzanian gemstone mine had disastrous impacts, when heavy rainfall caused a flood that left 65 miners dead. Only 10 years earlier, 100 miners were drowned from similar flooding in Tanzania.

Silicosis (Cutting and Polishing)

Silicosis is caused by inhaling large amounts of crystalline silica dust, which is found in certain stones, clays and rocks and released during the cutting, grinding and polishing processes. The dust particles enter the lungs where an immune response creates inflammation. Over time, inflammation leads to scar-tissue forming in the lungs, which reduces their ability to function. People with silicosis are at a higher risk of developing other respiratory problems such as lung cancer, bronchitis, emphysema and tuberculosis.

Building Safety

Many factories and manufacturing centres around the world do not meet standards required by building and construction legislation. As a result, deaths from fire incidents and building collapses are frequent.

Manufacturing centres often occupy multiple floors, and in recent years, there has been increasing awareness of the devastating consequences that unexpected building collapses inflict. On 24 April, 2013, an eight-story commercial building called Rana Plaza collapsed causing 1,134 deaths and leaving 2,500 people injured. Rana Plaza was used by a number of 'Big Name' American and European brands to manufacture fast fashion garments.

In many countries around the world, building collapses have been attributed to weak foundations, substandard constructional material, poor material mixing by construction workers, poor testing of building strength and excess load on strength of buildings. Since the Rana Plaza disaster, at least 109 similar workplace accidents have occurred.

In all workplaces, across the entirety of the jewellery and coloured gemstone supply chain, it is essential that workers are provided with:

- A safe space to work;
- Safe equipment, tools and machinery;
- Safe and hygienic facilities, including toilets, eating areas and first aid supplies;
- Information, training and appropriate supervision.

Poor health and safety management programmes result in more sick days, higher accident rates and greater reputational risks, which can impact commercial performance. The International Labour Organisation (ILO) estimates the economic burden of poor occupational health and safety practices at 4 percent of global gross domestic product each year.

Some businesses go beyond simply preventing injury and illness and develop health and safety programmes that support the general health and well-being of workers. This involves incorporating, for example, strategies to tackle stress, obesity, fatigue or substance addiction and abuse, and initiatives to promote fitness for work, reproductive health and work-life balance. Implementing a holistic approach to health and safety in the workplace can deliver substantial productivity benefits, that include:

- Fewer injuries and illnesses among workers;
- Fewer sick days;
- Fewer insurance claims, premiums and regulatory fines; and,
- Stronger staff motivation and performance.

Implementation

To prevent, mitigate, and manage potential or actual health and safety hazards in your business, here are steps you should take:

A

Commit to ensuring health and safety within your business



PLAN

1 WRITE A HEALTH AND SAFETY POLICY

The Health and Safety Policy should state that you are committed to conducting business in compliance with all applicable health and safety protocols, laws and regulations. It should declare your commitment to take continuous action to prevent, mitigate, and manage health and safety hazards within your work facility to ensure that all employees and anyone who enters your facility are safe at all times.

B

Implement your health and safety commitments



DO

2 ASSIGN THE RESPONSIBILITY

Your business should be able to demonstrate that it understands health and safety laws and regulations. To this end, at least one person within your business should be responsible for finding out the legislation and regulations that apply to the business and to make sure your business is compliant. Appoint a senior staff, for example, a Health and Safety Officer, to be responsible for monitoring all applicable laws and regulations and for ensuring employees adhere to your policy. This person will be responsible for monitoring all applicable laws and regulations and for reviewing relevant policies and procedures every year, to ensure that your business continues to comply with changing laws and standards. For smaller companies that may not have this type of expertise in-house, you can choose to outsource this role.

3 CONDUCT A HEALTH AND SAFETY RISK ASSESSMENT

A [health and safety risk assessment](#) is a thorough look at your workplace to identify the things and situations which may cause harm, particularly to people. A thorough health and safety risk assessment is comprised of the following steps:

- I. Determine the scope of your assessment. Before conducting a risk assessment, you should determine the scope of your assessment - you need to be specific about what you are assessing. For example, you may decide to conduct a risk assessment on a physical area where a work activity takes place. You may decide to assess a specific product, such as a new type of machinery being used. You may decide to do a general health and safety risk assessment of your building,

or of the health and safety risks associated with delivering your products. The most important thing here is that you are specific and that you focus on one area and/or tasks at a time.

- II. Identify hazards. Hazard identification is the process of finding, listing and characterising hazards. For this step, you should collect information on potential or actual hazards relevant to what you are assessing. If, for example, you are conducting a risk assessment on a physical area where a work activity takes place, you should identify hazards by collecting the following information:
 - a. The equipment and/or machinery being used;
 - b. The toxic chemicals and/or explosives being used; and,
 - c. Any other potential hazard, such as mine shafts.

A general building health and safety risk assessment can be conducted for any workspace, regardless of whether there is equipment/machinery being used or not.

This will involve collecting general information on the building. For this, identify:

- a. Where emergency exits are located and if they are clearly identifiable through the use of emergency lighting and signage;
- b. Where fire extinguishers are located, and whether they work properly and are up to date;
- c. Whether the area has a fire alarm system and a sprinkler system;
- d. The ventilation quality of the area being assessed; and,
- e. The capacity of the building in terms of load on strength.

Identifying Hazards

Overall, the goal is to find and record possible hazards that may be present in your workplace. It may help to work as a team and include both people familiar with the work area, as well as people who are not - this way you have both the experienced and fresh eye to conduct the inspection. In either case, the person or team should be competent to carry out the assessment and have good knowledge about the hazard being assessed, any situations that might likely occur, and protective measures appropriate to that hazard.

To be sure that all hazards are found:

- Look at all aspects of the work;
- Include non-routine activities such as maintenance, repair, or cleaning;
- Look at accident/incident records;
- Include people who work off site either at home, on other job sites, drivers, teleworkers, with clients, etc.;
- Look at the way the work is organized or done (include experience of people doing the work, systems being used, etc.);
- Look at foreseeable unusual conditions (for example, possible impact on hazard control procedures that may be unavailable in an emergency situation, power outage, etc.);
- Determine whether a product, machine or equipment can be intentionally or unintentionally changed (for example, a safety guard that could be removed);
- Review all of the phases of the lifecycle;
- Examine hazards to visitors or the public; and,
- Consider the groups of people that may have a different level of risk such as young or inexperienced workers, persons with disabilities, or new or expectant mothers.

III. Next, you should analyse and evaluate how likely and severe the hazard is. For this step, you should:

- a. Consider normal operational situations as well as non-standard events such as maintenance, shutdowns, power outages, emergencies, extreme weather, etc;
- b. Review all available health and safety information about the hazard such as safety data sheets, manufactures literature, and workplace inspection reports; and,
- c. Understand the minimum legislated requirements for your jurisdiction. This means you should collect information on what relevant laws, regulations, codes or standards may apply in your jurisdiction.

How do you know if the hazard will cause harm (poses a risk)?

Each hazard should be studied to determine its' level of risk. To research the hazard, you can look at:

- Product information / manufacturer documentation;
- Past experience (knowledge from workers, etc.);
- Legislated requirements and/or applicable standards;
- Health and safety material about the hazard such as safety data sheets (SDSs), research studies, or other manufacturer information;
- Information from reputable organizations, such as the Responsible Jewellery Council and the Responsible Minerals Initiative;
- Results of testing (atmospheric or air sampling of workplace, biological swabs, etc.);
- The expertise of an occupational health and safety professional;
- Information about previous injuries, illnesses, near misses, incident reports, etc.; and,
- Observation of the process or task.

Remember to include factors that contribute to the level of risk such as:

- The work environment (layout, condition, etc.);
- The systems of work being used (for example, machinery and equipment, chemicals, etc.);
- The range of foreseeable conditions (for example, power-outages, machinery failures, weather conditions, etc.);
- The way the hazard may cause harm (e.g., inhalation, ingestion, etc.);
- How often and how much a person will be exposed; and,
- The interaction, capability, skill, experience of workers who do the work.

Whether a hazard is deemed severe or not will come down to the discretion of those conducting the assessment. You may find it helpful to mark your hazards as 'high' 'medium' or 'low'.

The following is an example from a gemstone cutting and polishing factory:

Polly conducts a health and safety risk assessment in the cutting and polishing section of her jewellery manufacturing factory. During the first step, identify hazards, Polly discovers that an old cutting and polishing machine is being used, even though one of its pieces is missing. When Polly moves onto step two, analyse and evaluate, she reads the manufacturers literature on this piece of equipment, where she discovers that without all pieces, this cutting and polishing machine becomes very unsafe to use. Based on the information she has gathered, she establishes the hazard to be accident and injury, and determines that this hazard is very severe, as the likelihood of an accident occurring while operating this broken machine is high.

Polly also conducts a general building health and safety risk assessment, where she discovers that in multiple locations, electrical outlets and junction boxes are inadequately covered. After analysing and evaluating this hazard, she determines that the minimum legislated requirements for her jurisdiction require all electrical outlets and junction boxes to be thoroughly covered in any manufacturing building. Polly determines that this hazard could lead to a fire and establishes this to be a 'somewhat severe' risk.

Finally, Polly conducts a health and safety risk assessment for delivering products from the manufacturing factory to customers/clients. Polly uses the following table to assist her in conducting this assessment:

Table 1

TASK	HAZARD	RISK	RISK SEVERITY	COMMENT
Delivering products to customers	Drivers work alone	May be unable to call for help if needed	Medium	
	Drivers are working long hours, at 12+ hours or more	Fatigue, short rest time between shifts, risk of road accidents	High	Risk is high because the drivers are working longer than legal shifts
	Drivers lifting heavy boxes when delivering products	Injury to back from lifting, reaching, carrying	Low	Risk is low because all deliver personal are screened for being fit for work before hire

When doing an assessment, also take into account:

- The methods and procedures used in the processing, use, handling or storage of the substance, etc;
- The actual and the potential exposure of workers (for example, how many workers may be exposed, what that exposure is/will be, and how often they will be exposed);
- The measures and procedures necessary to control such exposure by means of engineering controls, work practices, and hygiene practices and facilities;
- The duration and frequency of the task (how long and how often a task is done);
- The location where the task is done;
- The machinery, tools, materials, etc. that are used in the operation and how they are used (for example, the physical state of a chemical, or lifting heavy loads for a distance);
- Any possible interactions with other activities in the area and if the task could affect others (for example, cleaners, visitors, etc.);
- The lifecycle of the product, process or service (for example, design, construction, uses, decommissioning);
- The education and training the workers have received; and,
- How a person would react in a particular situation (for example, what would be the most common reaction by a person if the machine failed or malfunctioned).
- By determining the level of risk associated with the hazard, you can then decide what kind of action plan, if any, is required.

IV. Finally, use the results of your risk assessment to develop action plans. These action plans should be based on the following hierarchy:

- a. Eliminate the hazard by removing or modifying the activity causing it—for example, swapping hazardous chemicals for safe ones, or using different manufacturing processes.
- b. Control the hazard at the point where it starts—for example, installing local ventilation or dust extraction systems, isolation rooms or acoustic insulation and noise control systems.
- c. Minimise the hazard by designing safe work systems and/or taking administrative or institutional measures—for example, providing training or communication materials on safe work procedures, monitoring the workplace, limiting exposure or working hours, or promoting job rotation.

4. Provide Personal Protective Equipment (PPE), which includes equipment such as protective clothing. This type of control should be used along with other existing processes where hazards are not particularly well controlled. Action plans will vary depending on the hazards identified and the evaluation to determine the risk level. Below are some examples of common health and safety hazards throughout the coloured gemstone and jewellery supply chain, along with points to consider when creating an action plan.

Table 2

HEALTH AND SAFETY HAZARD

ACTION PLAN

ACCIDENTS AND INJURIES CAUSED BY TOXIC CHEMICALS (MINING, CUTTING AND POLISHING, MANUFACTURING)

Consider:

- Create an adequate inventory and documentation system;
- Store safety data sheets with all toxic chemicals and train employees on how to read them;
- Plan for the use, storage and disposal of toxic chemicals,
- Train employees on correct procedures before they handle any toxic chemical, and;
- Where feasible, consider finding alternatives to hazardous substances.

For more detailed information, please refer to the topic 'Management of Chemicals and Hazardous Substances' in the Gemstones and Jewellery Community Platform.

ACCIDENTS AND INJURIES CAUSED BY EQUIPMENT AND MACHINERY (MINING, CUTTING AND POLISHING, MANUFACTURING)

Consider:

- Train each worker on every piece of equipment they use;
- Provide appropriate **personal protective equipment** and mandate it to be used;
- Provide adequate staffing levels (more often than not, overtime hours are implemented because of low staffing hours – overworked employees may suffer from exhaustion and cut corners to meet or exceed output, leading to a higher chance of accidents);
- Inspect and maintain all equipment and machinery (maintenance should include monthly inspections and repairing equipment as soon as possible); and,
- Educate employees through training – continually cultivate a safety standard among employees and management staff.

FLOODING (MINING)

Consider:

- Ongoing systems of boreholes and pump stations must be installed to prevent water entering mines; these are critical for the continuous dewatering of mining operations;

FLOODING (MINING)

- Have an adequate arrangement of pumps that are appropriate to the local flood risk is critical and should be a focal point of a health and safety risk assessment; and,
- Constantly rebuild and improve levee banks standards (levee banks are an important defense against flood and are constantly being rebuilt to an improved standard).

SILICOSIS (CUTTING AND POLISHING)

Consider:

- Wear dust masks or respirators when working with high silica-content gemstones or when cutting, grinding or polishing anything that produces fine dust particles;
- Ensure that dust masks are never shared and are stored hygienically (when shared and not stored hygienically, they risk spreading infectious disease); and,
- Dampen dust from mining through to polishing, as water can be used to reduce the levels of airborne dust particles (for example, during polishing using a water spray and a damp duster to clean down surfaces after completing each job considerably reduces the dust).

BUILDING SAFETY

Consider:

- Always adhere to building and fire safety laws and regulations, including building capacity;
- Ensure exist doors open from the inside and are easily accessible;
- Emergency lights and exist signs must be visible and work properly;
- Stairways, pathways and/or walkways must never be obstructed;
- Electrical outlets, circuit breaker panels and junction boxes must be adequately covered;
- Buildings must have a fire alarm system and a sprinkler system that is tested annually by a licensed fire alarm company;
- Fire extinguishers must be visible, work properly and be up-to-date; and,
- All employees must be trained on the above.

4 ESTABLISH A PROCESS FOR CONSULTING WORKERS

Establish a process for consulting workers and keeping them informed and involved. This may, for example, be achieved by creating an anonymous forum, such as a box, where employees can write down questions and concerns for management to ad-

dress during a monthly meeting.

This may also be achieved through the creation of a health and safety committee.

If you decide to create a health and safety committee:

- Establish procedures for workers to choose representatives for the joint health and safety committee (or equivalent mechanism), for example through the union or workforce nominations or elections;
- Make sure that the committee includes:
 - a senior manager;
 - any on-site health staff; and,
 - representation to reflect the size and structure of your facility—for example, if you operate multiple shifts, the committee should include representation from all shifts.

Regardless of whether you decide to use an anonymous forum, or create a health and safety committee, your health and safety officer should meet regularly and serve as a forum to discuss health and safety matters requiring collaboration between management and workers, for example:

- the root causes of recent accidents and how to prevent recurrences;
- the effectiveness of training;
- potential health and safety hazards; or
- short- and long-term health trends identified by employees, contractors or management.

5 WRITE A HEALTH AND SAFETY PROCEDURE

A procedure will help to formalise the aforementioned steps and designate day-to-day activities. Health and safety risk assessments may seem complicated at first, but a written procedure will ensure that your staff have the guidance they need to integrate your policy and commitments into your business activities.

6 TRAIN YOUR STAFF

Train all workers to ensure they recognise and understand all health and safety hazards prevalent in your workplace. The health and safety hazards specific to your business should be considered when deciding on how to train your staff. Depending on where you are located within the gemstone and jewellery supply chain, use Table 2 as a guide for training needs. Generally speaking, all workers should be trained on the following:

- I. Your Health and Safety Policy and Procedure;
- II. Your business's mechanism for employees to raise and discuss health and safety issues;
- III. The process for filing a report with the Incident Registry;
- IV. How to use a general first-aid kit and where it is kept within your workplace;
- V. Where emergency exits are located; and,
- VI. Relevant building codes and regulations that must be adhered to at all times.

7 ENSURE HEALTH AND SAFETY INSTRUCTIONS ARE VISIBLE

Where relevant, ensure health and safety instructions are visible in the workplace in a language workers understand. For example, specific instructions should be provided near equipment, in chemical storage and facilities.

8 MAINTAIN ALL REQUIRED HEALTH AND SAFETY RECORDS

Create and maintain all of the required health and safety records, including a training registry and an incident registry. It is very important that you maintain

a record of any health and safety incidents that occur. Employees should be trained on how to access this incident registry, or who in management to contact in order for them to make an incident report and record it in your business's incident registry.

A training registry should also be maintained in order for your business to keep track of which employees have been trained and for/on what. This will help your business ensure that training is always kept up to date for all employees.

C

Ensure proper sanitation

9 ENSURE ACCESS TO HEALTH AND SAFETY SUPPLIES AND SANITARY FACILITIES

Ensure that in all business facilities, workers are provided access to:

- I. Running water, warm water, soap and towels and other drying devices;
- II. Toilets;
- III. A safe space to store foods;
- IV. As much potable water as they need - if contamination risks are high, carry out regular tests to ensure the water remains safe to drink, and keep records of the results. This is important in case a health and safety emergency arises and workers are required to stay inside the building for a prolonged period of time.

D

Monitor and review your health and safety practices



CHECK

10 REGULARLY MONITOR, REVIEW, UPDATE

Regularly monitor, review, and where necessary update your Health and safety practices. This includes the activities that are performed by the relevant staff and your policy and procedure to identify any areas in need of potential improvement and to ensure that your practices are up-to-date.

Glossary

Health and Safety

Hazard:

A hazard is a source of potential harm, injury or detriment.

Health and safety:

Health and safety includes a diverse range of initiatives intended to protect workers from exposure to short- and long-term hazards at work and to reduce workplace injuries and illnesses.

Health and safety risk assessment:

A health and safety risk assessment is a thorough look at your workplace to identify the things and situations which may cause harm, particularly to people.

Personal protective equipment:

Personal protective equipment (PPE) refers to protective clothing and garments (such as gloves, footwear, helmets, goggles and earplugs) designed to protect the wearer from exposure to job-related hazards.

Workers:

Workers include both directly employed workers that have contracts with the your business and indirectly employed workers that regularly work at your business sites and that have employment contracts with a third party, such as a labour agent, labour provider or contractor/subcontractor.

TDi Sustainability

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