Data sheet:
EMERGENCY EQUIPMENT – EYE AND SKIN RINSING

QUÉBEC LEGISLATION

Summary of sections 75 and 76 of the Regulation respecting occupational health and safety (chapter S-2.1, r. 13)

Presence
- of a dangerous corrosive product

OU
- of a dangerous product that can cause severe or irreversible eye or skin damage

YES →
Eyewash stations or emergency showers must be:
- clearly identified
- easily accessible
- located near at-risk workers
- connected to warm water

NO ↓

Presence
- of a dangerous toxic product rapidly absorbed through the skin and eyes

OR
- of a dangerous product liable to cause severe irritation

YES →
Other permitted rinsing equipment:
- showers
- portable showers
- eye-washes
- any other valve or fitting

NO ↓

In other cases and according to the danger level

YES →

According to this regulation, only showers installed or modified as of August 2, 2002, must have warm water.

AMERICAN STANDARD
(REFERENCE ANSI/ISEA Z358.1)

As there is no Québec standard for emergency eye and skin equipment, the American ANSI Z358.1 standard is used to establish design and installation standards for emergency eye wash stations.

HIERARCHY (STEPS) OF CONTROL

Various preventive measures exist to limit or reduce the risk to workers. These measures can be divided into three categories:

1. **Measures to eliminate, or replace, dangerous products:** measures aimed at eliminating work-place danger or replacing dangerous products with safe ones
2. **Engineering measures:** measures that affect the design or modification of factories, equipment, ventilation systems, and procedures in order to reduce the source of exposure
3. **Administrative measures:** measures that modify the way work is performed (including work schedules), the content of policies and other regulations, and labour practices such as operational standards and procedures with respect to training, workplace housekeeping, equipment maintenance, and personal hygiene
4. **Improve worker safety:** measures concerning equipment worn by workers to reduce their exposure to dangerous products, especially contact with such products

DANGEROUS PRODUCT RISK ASSESSMENT

The best way to assess the risk posed by dangerous products in the workplace is to use the WHMIS classification (security label and Material Safety Data Sheet). It covers all risks, including physical and health risks.

To determine whether emergency equipment is necessary in the event that a dangerous product is found in a workplace, it is important to carefully read the product's Material Safety Data Sheet (MSDS) and the label on the product container. Warnings, first aid descriptions, and other information generally indicate the type of emergency equipment needed.

There is another way to assess whether a product is hazardous using the pH level indicated on the table. Two pH levels indicate that a product is dangerous as shown in the table below.

According to WHMIS: "dermal corrosion" danger levels, category 1 or sub-category 1A, 1B, or 1C, and "severe ocular lesions," category 1		
pH ≤ 2 **very acid**	 Dermal corrosion Severe ocular lesions	**pH ≥ 11.5** **very alkaline**

SAMPLE MATERIAL SAFETY DATA SHEET (MSDS) OR DANGEROUS PRODUCT LABEL

Product classification
Severe ocular lesions/ocular irritation, category 1

Pictogram: 

Signal word: Danger

Hazard statement: Causes severe ocular lesions

Precautionary statements
In case of contact with eyes..." or "in case of contact with skin..."

DESCRIPTION OF FIRST AID

4.1. Description of first aid treatment

Inhalation: Transfer the victim outside and position them so they can breathe comfortably. Call a POISON CONTROL CENTER or doctor immediately.

Contact with skin: Wash thoroughly with soap and water. Remove contaminated clothing immediately. Call a POISON CONTROL CENTER or doctor immediately.

Contact with eyes: If the victim is wearing contact lenses and they can be easily removed, remove them. Continue flushing. Flush carefully with water for several minutes. Call a POISON CONTROL CENTER or doctor immediately.

Ingestion: Call a POISON CONTROL CENTER or doctor immediately. Rinse mouth. DO NOT induce vomiting.

4.2. Main symptoms and effects, acute and delayed

Symptoms related to use: Causes severe skin burns and eye damage.
Causes serious eye damage.

CLASS OF DANGEROUS PRODUCT

A product is considered a dangerous product capable of causing rapid, severe, and irreversible damage to the skin or eyes if statements like the ones indicated below are on the label.

Dermal corrosion /dermal irritation, category 2
OR
Severe ocular lesions/ocular irritation
OR
Category 2, or sub-category 2A or 2B, and the pictogram 

USING EMERGENCY EQUIPMENT

Safe use of emergency equipment depends on following certain criteria. In particular, you must:

- temper the water (see the illustration below and the ANSI/ISEA Z358.1 standard published by the Industrial Safety Equipment Association)

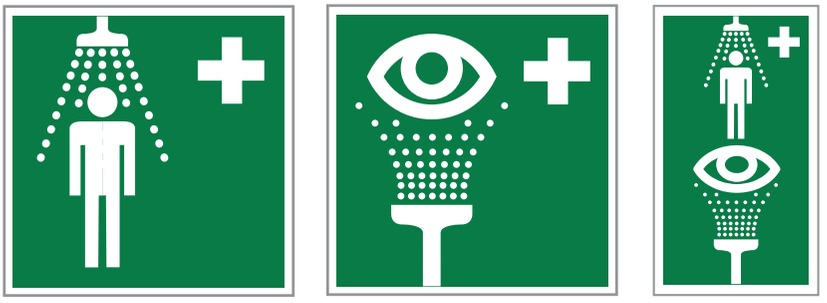
Below 16°C Too cold	Between 16 et 38°C Suitable	Over 38°C Too hot

- ensure that the equipment comes with a release bar that is easy to find and takes less than one second to activate
- post user instructions near the emergency equipment

LOCATION OF EMERGENCY EQUIPMENT

Emergency equipment will be placed in a location that is:

- close to the source of danger, directly accessible within 10 seconds (about 16 m or 55 feet)
- clean, well-lit, and far from any electrical equipment
- identified with a pictogram that makes it easy to find



EMERGENCY EQUIPMENT MAINTENANCE AND INSPECTION

The employer must take measures to ensure that emergency equipment is maintained regularly and inspected weekly according to the manufacturer's recommendations.

Regular maintenance (by a specialist)

- Inspect emergency equipment according to manufacturer's recommendations.
- Use a register to record the regular maintenance work performed on emergency equipment

Weekly inspection (by a first aider or a designated person)

- Activate the emergency equipment to run water through the pipes.
- Record in the inspection register the following information:
  - inspection date
  - corrective actions taken, if applicable, and the name of the person responsible
  - corrective action request date, if applicable, and the date on which corrective action was taken as followup
- Sign the register after the inspection.

TRAINING CONTENT INTENDED FOR THE STAFF

The training received by at-risk workers and first aiders must include the following points:

- importance of consulting the product's updated Material Safety Data Sheet prior to its use
- location and use of emergency equipment
- practical exercises, notably a drill with eyes shut??
- items to be inspected, identity of the person responsible, and tracking of corrective actions

CHOOSING EMERGENCY EQUIPMENT

Various factors must be considered when choosing emergency eye and skin rinsing equipment. The answers provided to the following questions can help guide your choice.

- Where are splashes likely to occur:
  - on the body?
  - on the face and eyes?
- How long should rinsing last according to the Material Safety Data Sheet?
- Is it technically possible to connect the emergency equipment to the waterworks system (potable water)?
- Is it technically possible to connect the emergency equipment to a drainage system or retention basin?
- Can water in the supply line freeze?

IMPORTANT SPECIFICATIONS*

Fixed drench eye and body shower	Fixed eye and face wash station	Lever activated fixed eye wash station	Reservoir equipped portable eye wash station	Pressurized reservoir equipped eye wash station
				
Height of water stream from shower head: between 208.3 cm and 243.6 cm (82-96 in.)	Height of water stream: between 83.8 cm and 134.62 cm (33 and 53 in.)		Height of water stream: between 83.8 cm and 134.62 cm (33 and 53 in.)	
For body: 76 litres per minute (20 gpm) for at least 15 minutes**	**For face and eyes:** 11.4 litres par minute (3 gpm) for at least 15 minutes**	**For eyes :** 1.5 litres per minute (0.4 gpm) for at least 15 minutes**	**For eyes :** 1.5 litres per minute (0.4 gpm) for at least 15 minutes**	**For eyes :** 1.5 litres per minute (0.4 gpm) for at least 15 minutes**

* See ANSI/ISEA Z358.1-2014 standard published by the Industrial Safety Equipment Association.

** Consult the Material Safety Data Sheets (MSDS) for information on appropriate rinsing time. A risk analysis of the task, products, and workplace must also be performed. The choice of emergency equipment, such as an emergency shower or an eye wash station or both, must be in line with identified risks. According to the Z358.1 standard, eye wash stations must be designed to shoot water into both eyes at the same time with a flow of 1.5 litres /minute (0.4 gallons/minute), for 15 minutes. If eyes are rinsed for at least 30 minutes, as is recommended for dangerous products, only an eye wash station connected to the plumbing system will do, unless sufficiently large reservoirs can ensure that the required rinsing times are followed.

ADDITIONNAL INFORMATION

The flow of water from the emergency equipment must be sufficient to rinse both eyes and the face simultaneously.

Some emergency equipment can be fitted with an automatic alarm system that goes off when the equipment is used.

Building and public works sector

Mobile drench showers are available for construction sites.

The eye wash bottle:

- allows injured workers to start rinsing their eyes while moving towards the fixed shower
- does not have enough water to continuously rinse both eye for 15 minutes
- does not meet criteria for fixed eye showers

For more information on emergency equipment specifications, employers should discuss the matter with their suppliers.

Sources:

COMMISSION DE LA SANTÉ ET DE LA SÉCURITÉ DU TRAVAIL DU QUÉBEC, *First Aid in the Workplace,* 6th edition, [Québec], the Commission, 2014, 255 p. Also available online on the CSNESST website [in French only].

COMMISSION DE LA SANTÉ ET DE LA SÉCURITÉ DU TRAVAIL DU QUÉBEC, RÉSEAU DE SANTÉ PUBLIQUE EN SANTÉ AU TRAVAIL, *Premiers secours et premiers soins des programmes de santé sectoriels secteur 03-11-15, document de référence*, CSST and RSPSAT, 2014, 41 p.

HEALTH CANADA, *Workplace Hazardous Materials Information System (WHMIS)* 2015. Available online on the Health Canada website.

INDUSTRIAL SAFETY EQUIPEMENT ASSOCIATION, *American National Standard for Emergency Eyewash and Shower Equipment*, ANSI/ISEA Z358.1-2014 Standard, Arlington [Virginia], Industrial Safety Equipment Association, 2014, 22 p.

QUÉBEC, *An Act to enhance the communication of hazard-related information concerning products present in the workplace and to amend the Act respecting occupational health and safety*, [Québec], Québec Official Publisher, 2015, 26 p. Also available online on the Publications du Québec website.

QUÉBEC, *Hazardous Products Information Regulation, chapter S-2.1, r. 8.1, updated April 1*, 2016, [Québec], Québec Official Publisher, 2016. Available on the Publications du Québec website.

QUÉBEC, *Regulation respecting occupational health and safety, chapter S-2.1, r. 13, s. 75 and 76, updated April 1*, 2016, [Québec], Québec Official Publisher, 2016. Available on the Publications du Québec website.

Website of the Canadian Centre for Occupational Health and Safety.
www.cchst.ca

This tool was developed by a Provincial Nursing Working Group of Réseau de santé publique en santé au travail (RSPSAT) in collaboration with Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST).