



OH&S Safety Matters

April Issue 2025



A National Day of Mourning

The National Day of Mourning is marked annually across Canada on April 28. This day is dedicated to remembering those who have lost their lives, suffered injury or illness on the job, or experienced a work-related tragedy.

In 1984, the Canadian Labour Congress established April 28th as the National Day of Mourning in Canada to remember and honour those who have died, been injured or suffered illness in the workplace.

Each year, workers, families, employers, and communities take time to remember those who have lost their lives on the job, and we all renew our commitment to creating healthy and safe workplaces.

Every injury, disease, or death serves as a powerful reminder that employers and employees must work together to ensure that each and every workplace is a healthy and safe place to work.

How to offer support

Traditionally on April 28, the Canadian flag flies at half-mast on Parliament Hill and on all federal government buildings. Employers and workers observe Day of Mourning in a variety of ways. Some light candles, lay wreaths, wear commemorative pins, ribbons or black armbands, and pause for a moment of silence.

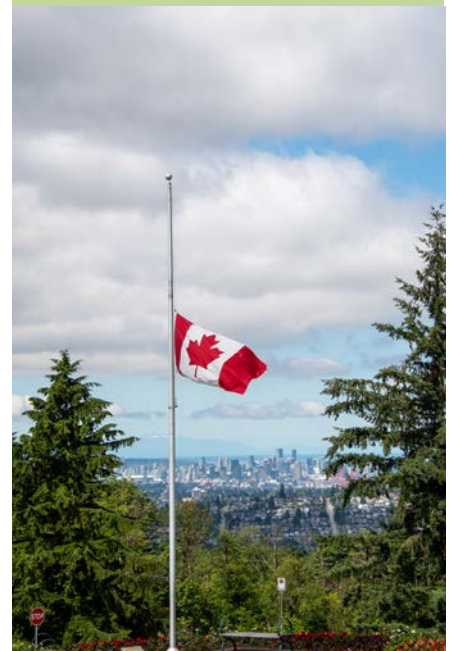
We encourage organizations, employees, and communities to *observe a moment of silence at 11 a.m. on April 28 to honour those who have died or suffered injury or illness due to a work-related tragedy*, and we also need to reflect on the fact that with each worker tragedy there are loved ones, family, friends and co-workers who are directly affected, left behind, and deeply impacted – their lives also forever changed.

It is also a day that reminds us of the need to protect the men and women that head off to work every day. Let this day also serve as a call to improve health and safety conditions in our workplaces.

Contents

A National Day of Mourning	1
Liquid Nitrogen Shrink Fitting	2
Crossword Puzzle	4
Time for a Safety Break	6
Staying in Touch	6

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Liquid Nitrogen

The OHS Registry has developed a program titled **Liquid Nitrogen Safe Handling & Use for Mining Sector Workers**. It is designed to provide general information to site safety personal, loss prevention managers, joint health & safety committee members, supervisors, and mine sector workers.

The scope of this course is to convey particulars about safety hazards, requirements for worker protection, safe work procedures, inspection criteria, applicable legislation and guidelines used to identify and control hazards associated with liquid nitrogen handling and use.

This training program focuses on empowering workers to be healthy and safe while working in the mining sector.

Although liquid nitrogen is not toxic, it does have two major hazardous properties. Because liquid nitrogen can evaporate quickly, it can effectively displace air to create an atmosphere that is unable to support life. It can cause injury due to the intense cold of the liquid.

Liquid nitrogen is stored, shipped and handled in several types of containers, depending upon the quantity required by the user. The types of containers in use are:

- cryogenic liquid dewar,
- cryogenic liquid cylinder, and
- cryogenic storage tank.

It is important to consider where containers are stored and used. Ensuring the suitability of the



Shrink Fitting

area assists in managing some of the hazards of this product and reduces the associated risks.

A cryogen or cryogenic liquid is defined as any liquid with a boiling point below 93K (-180°C or -240°F) at 1 atmosphere of pressure. This definition includes liquid nitrogen, liquid argon, liquid helium, liquid hydrogen, and liquid oxygen, among others.

This training program addresses cryogenic safety with a primary focus on liquid nitrogen as the inert cryogenic. **All employees, and subcontractors who handle liquid nitrogen must follow these guidelines:**

- **Be aware of the hazards.**
- **Know the methods for controlling those hazards.**
- **Follow the proper safe work procedures.**
- **Receive job training specific to the use of liquid nitrogen and the work task that the liquid nitrogen is being used for (i.e.: shrink fitting bushings).**

Course topics discussed include;

- Current applicable legislation, mine code and standards.

- Roles and responsibilities of management and workers.
- Worker training in liquid nitrogen hazards and exposure.
- Documenting a liquid nitrogen safety program.
- The hazards management program.
- The risk assessment processes to identify hazards.
- Conducting inspections and hazard analysis.
- Hazard handling controls and monitoring measures.
- Housekeeping and safe work principles.
- Handling and storage systems and procedures.
- The need to monitor oxygen levels.
- Perform safety check on shrink fitting equipment.
- Identify and prepare safe areas to undertake shrink fitting.
- Safely decant liquid nitrogen into shrink fitting equipment.
- Understand the liquid nitrogen shrink fitting operations.
- Spill prevention and response.
- Documentation and reporting.

The shrink fitting process is the method of employing a cryogenic agent (liquid nitrogen) to shrink a component so that it will fit into another component easily. When the nitrogen affected components returns to ambient temperature the component will expand to its resting dimension causing a friction (interference) fit with its mating component. This process is ideal for components such as shafts, tappets, sockets, roller bearings, bushings etc.

For many materials, cryogenically shrink fitting, rather than using heat, offers advantages as high temperatures can cause grain growth and loss of desirable mechanical properties in heated parts.

Where liquid nitrogen is to be used on the mine site:

- ensure risk assessment is conducted implemented and communicated. This should include the provision of tools (tongs, baskets, lifting jigs), suitably rated PPE (gloves, apron, double eye protection) and task specific procedures.
- provide site-specific training in the use of liquid nitrogen.

- Records of training shall be maintained.
- Supervisors must ensure site procedures for the safe use of liquid nitrogen are implemented and followed.
- Mine workers must understand and comply with the mine site procedures for the safe use of liquid nitrogen.

The Mines Act and Health Safety and Reclamation Code uses several terms for record keeping, including log book, document, records and written reports. To demonstrate due diligence, it is important to keep records of work activities, safety procedures. and training provided to employees.

The **Liquid Nitrogen Handling and Use Program** can be delivered in a 4:00 hour content format with a 15 minute nutrition break.

Upon successful completion a certification card will be issued with a 3 year validation period.

Get Your Instructor Certification so that you can deliver more effective training !



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Crossword Puzzle Answers

Here are the answers to the March Safety Matters Crossword Puzzle.

Minor Spills

Across

- Cleanup
- Release
- Spill
- Basin
- Dispersants
- Containment
- Mitigate
- Minor
- Berm

Down

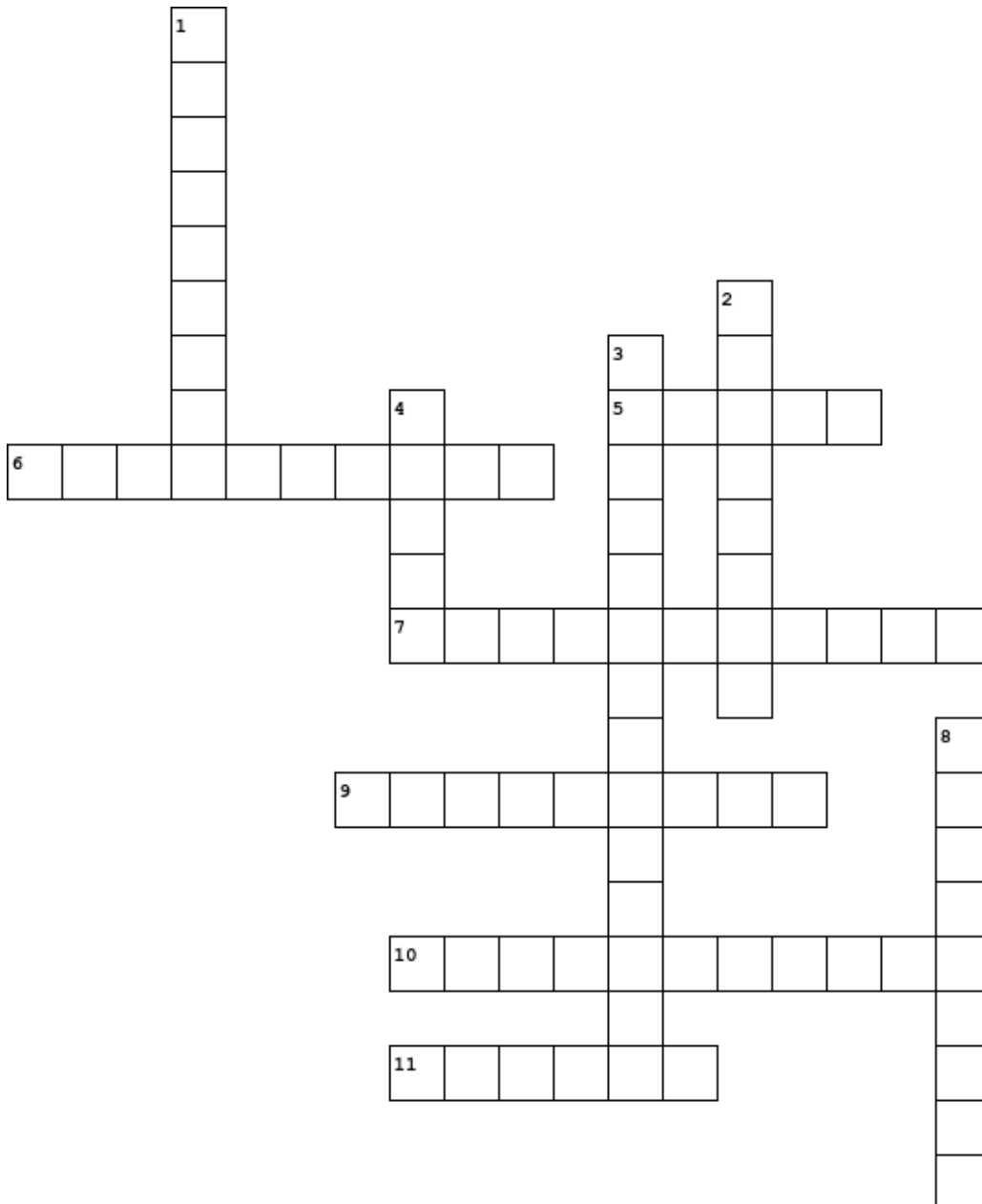
- Remediation
- Assessment
- Pollutant
- Solid
- Response
- Socks
- Recovery

Upcoming challenge solve the **Liquid Nitrogen Crossword Puzzle** on the next page **Play Now!**



Liquid Nitrogen Shrink Fitting Crossword

The OHS Registry *Safety Matters* crossword puzzles are ideal for people who love words, general knowledge, and testing their problem-solving skills. So, what are you waiting for? Print the puzzle to play now !



Clues for the Confined Space Entry Crossword Puzzle

Select a clue from the 'across' or 'down' lists. Think up possible answers to the clue.

Each across and down clue is assigned a unique number. This number corresponds to the number for its answer in the grid. Words in the crossword puzzle will cross each other, this is the source of inspiration for the name of the game, crossword!

Who can complete the crossword challenge. Save your progress, the correct answers to the crossword challenge will be revealed in the next issue of *Safety Matters*

Across

5. A type of hand cart used to handle a heavy and cumbersome liquid nitrogen cylinder safely.
6. Used to protect the head and face in case of a splash from cryogenic liquid nitrogen.
7. The main use that liquid nitrogen has in an immersion cooling process for shrink fitting.
9. Liquid nitrogen has a very low boiling point and if opened to air it can do this very quickly.
10. This is required to prevent oxygen deficiency in areas where liquid nitrogen is used.
11. In an enclosed area the rapid expansion of liquid nitrogen can quickly displace this element.

Down

1. Contact with liquid nitrogen can cause this as tissues rapid freeze.
2. A cryogenic liquid vessel that is insulated, vacuum-jacketed and pressurized.
3. Training in the use and handling of liquid nitrogen is this type of hazard handling control.
4. A type of small capacity container used to hold liquid nitrogen that is non-pressurized.
8. Keep the liquid nitrogen container upright at all times, except when performing this task.

Time for a Safety Break

We are all looking for the latest information, however one of the big challenges we face is to stop consuming vast amounts of media when the information we seek stops being informative and has simply become a constant stream of alarming news. The objective is to gain awareness, not to multiply stress and anxiety.

The next time you feel over it, take a break. Even though it seems counterintuitive, taking a break can be the best way to improve your mood, your well being, and your performance capacity.

Occupational health and safety deserves recognition and during the first week of May each year, Safety and Health Associations from Canada, the United States and Mexico will run campaigns to promote health and safety in the

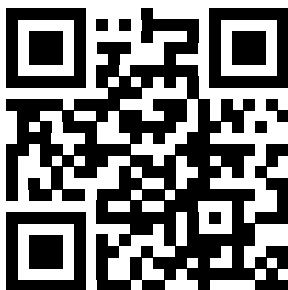


workplace, and celebrate those whose careers involve keeping the workplace safe.

Invest time in a Safety Break to review and update company safety manuals, refresh safety training and acknowledge those employees who promote a safe work environment and work safely every day.

For more Information

Point your smartphone camera at this QR code and take a picture to be redirected to the OH&S Registry Website. www.ohsregistry.com



Head Office 825 – B Laval Crescent Kamloops, BC V2C 5P2
Western Region **ph: 778.957.6407** **Eastern Region** **ph: 647.250.7646**



2025 e-Catalogue is Available

Are you ready to tap into a wider network of training programs. Get access to 100% of the OH&S safety training programs by simply sending an e-mail and asking for a FREE copy of the OH&S training course library !

info@ohsregistry.com

Staying in Touch

We want you to be aware that you always have the opportunity to opt-out from receiving OH&S Registry electronic communications. To opt-out, simply call the OH&S Registry at 778.957.6407 or email markh@ohandscanada.ca and ask to be taken off the OH&S Registry Membership email list.

The OH&S Registry will never sell or rent your email address and should you decide that you no longer want to receive further electronic communications we will accommodate your decision to “unsubscribe”.

We trust you will choose to continue to receive the ***OH&S Safety Matters*** newsletters and other promotional materials so you can stay up to date on new programs, best practice tips, and other OH&S Registry news.

We appreciate your business, and look forward to working with you to achieve your safety training goals. Thank you for being a subscriber!