

## Technical Article-10

# How to Stay Safe and Healthy in Mining: A Guide for Miners

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Mining is a vital industry that provides raw materials for various sectors and creates jobs and income for millions of people. However, mining is also one of the most dangerous occupations in the world, exposing miners to various risks and hazards that can harm their health and well-being.

In this article, we will explore seven common risks and hazards that miners face in their work, and how they can protect themselves against them. By following these tips and guidelines, you can reduce the chances and severity of injuries and illnesses, and improve your health and safety in mining.

### 1. Dust: The Invisible Enemy

Dust is everywhere in mining, especially in underground mines. Dust can come from different sources, such as drilling, blasting, crushing, loading, transporting and processing of ore and coal. Dust can contain harmful substances, such as silica, asbestos, metals, radon and coal dust.

Dust can cause serious respiratory diseases, such as silicosis, asbestosis, pneumoconiosis, lung cancer and chronic obstructive pulmonary disease (COPD). Dust can also irritate your eyes, skin, nose and throat, and trigger allergies and asthma.

To protect yourself from dust, you should:

- ❖ Wear a respirator or a dust mask that fits well and filters out the dust particles.
- ❖ Use wet methods or dust suppression systems to reduce the amount of dust in the air.
- ❖ Maintain good ventilation in the work area to dilute the dust concentration.
- ❖ Avoid eating, drinking or smoking in dusty areas.
- ❖ Wash your hands and face before eating or drinking.
- ❖ Shower and change your clothes after work.

### 2. Noise: The Loud Threat

Noise is another common hazard in mining, especially in surface mines. Noise can come from different sources, such as blasting, drilling, machinery, vehicles and tools. Noise can damage your hearing, cause tinnitus (ringing in the ears), stress, fatigue, hypertension and cardiovascular diseases.

To protect yourself from noise, you should:

- ❖ Wear ear plugs or ear muffs that reduce the noise level.
- ❖ Use noise-reducing equipment or techniques, such as mufflers, silencers or dampeners.
- ❖ Limit the duration and intensity of noise exposure.
- ❖ Avoid working near loud sources of noise or use barriers to block the noise.
- ❖ Have regular hearing tests and check-ups.

### 3. Vibration: The Shaky Danger

Vibration is another common hazard in mining, especially in underground mines. Vibration can come from different sources, such as blasting, drilling, machinery, vehicles and tools. Vibration can affect your muscles, bones, joints, nerves, blood vessels and organs.

Vibration can cause musculoskeletal disorders (MSDs), such as back pain, neck pain, shoulder pain, hand-arm vibration syndrome (HAVS) and whole-body vibration syndrome (WBVS). Vibration can also damage your nerves, circulatory system, digestive system and reproductive system.

To protect yourself from vibration, you should:

- ❖ Wear anti-vibration gloves or pads that absorb the vibration.
- ❖ Use vibration-reducing equipment or techniques, such as dampeners, isolators or balancers.
- ❖ Limit the duration and intensity of vibration exposure.
- ❖ Avoid working with vibrating tools or machines for long periods or at high frequencies.
- ❖ Have regular medical check-ups and examinations.

#### 4. Heat: The Scorching Risk

Heat is another common hazard in mining, especially in underground mines. Heat can come from different sources, such as geothermal gradients, machinery, vehicles and lighting. Heat can raise your body temperature and cause dehydration and electrolyte imbalance.

- Heat can cause heat stress, heat exhaustion, heat stroke, dehydration and electrolyte imbalance.
- Heat can also affect your mental performance, alertness and decision-making.

To protect yourself from heat, you should:

- ❖ Wear light and breathable clothing that allows sweat evaporation and heat transfer.
- ❖ Drink plenty of water and fluids that replenish electrolytes and prevent dehydration.
- ❖ Avoid alcohol, caffeine and other diuretics that increase fluid loss and dehydration.
- ❖ Use cooling devices or techniques, such as fans, air conditioners or water sprays.
- ❖ Take frequent breaks and rest in shaded or cool areas.
- ❖ Monitor your body temperature and signs of heat-related illnesses.

#### 5. Radiation: The Invisible Killer

Radiation is another common hazard in mining, especially in uranium mines. Radiation can come from different sources, such as radon gas, radioactive minerals, x-rays and gamma rays. Radiation can penetrate your cells and damage your DNA and chromosomes.

Radiation can cause radiation sickness, cancer, genetic mutations and birth defects. Radiation can also affect your immune system, blood system and reproductive system.

To protect yourself from radiation, you should:

- ❖ Wear a dosimeter or a radiation badge that measures the amount of radiation exposure.
- ❖ Use shielding materials or techniques, such as lead, concrete or water that block or reduce the radiation intensity.
- ❖ Maintain a safe distance from the radiation source or use remote control devices to operate the equipment.
- ❖ Limit the duration and frequency of radiation exposure.
- ❖ Follow the ALARA principle (As Low As Reasonably Achievable) to minimise the radiation dose.

#### 6. Chemicals: The Toxic Threat

Chemicals are another common hazard in mining, especially in processing plants. Chemicals can come from different sources, such as explosives, solvents, reagents, fuels and lubricants. Chemicals can react with your skin, eyes, nose, mouth and lungs.

Chemicals can cause chemical burns, skin irritation, eye damage, respiratory problems, poisoning and organ damage. Chemicals can also affect your nervous system, endocrine system and metabolic system.

To protect yourself from chemical, you should:

- ❖ Wear personal protective equipment (PPE) such as gloves, goggles, masks and suits that prevent contact with the chemical.
- ❖ Use safe handling and storage practices, such as labelling, sealing, ventilating and disposing of the chemical.
- ❖ Follow the material safety data sheet (MSDS) or the safety data sheet (SDS) that provide information on the chemical properties, hazards and precautions.
- ❖ Seek medical attention immediately if you experience any symptoms or signs of chemical exposure.

#### 7. Psychosocial: The Mental Challenge

Psychosocial is another common hazard in mining, especially in remote and isolated mines. Psychosocial can come from different sources, such as work stress, fatigue, shift work, long hours, isolation, loneliness, boredom and violence. Psychosocial can affect your mental health and well-being.

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Psychosocial can cause mental health problems, such as anxiety, depression, post-traumatic stress disorder (PTSD), substance abuse and suicide.

To protect yourself from psychosocial, you should:

- ❖ Maintain a healthy work-life balance, such as having regular breaks, hobbies, social activities and family time.
- ❖ Seek support from your colleagues, friends, family or professional counsellors if you feel stressed, depressed or lonely.
- ❖ Join a peer support group or a wellness program that offers coping strategies and resources for miners.
- ❖ Report any incidents of harassment, bullying or violence to your supervisor or manager.

### Conclusion

Mining is a rewarding but risky profession that requires constant vigilance and precaution. As a miner, you have the responsibility to protect yourself and your colleagues from the various risks and hazards that you encounter in your work. By being aware of the common risks and hazards, and by taking appropriate measures to prevent and control them, you can ensure your health and safety in mining. Remember, your health and safety are your most valuable assets. Stay safe and healthy!

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