



## ***Personal and Portable Gas Monitor Standard***

### **1.0 PURPOSE**

This standard specifies the selection, use, inspection and care of personal and portable gas monitors at SaskPower.

### **2.0 DEFINITIONS**

#### **2.1 Bump Test**

A bump test is used to test a monitor, by using a test gas to “bump” the sensors into alarm states.

#### **2.2 Calibration**

Calibration is used to test a monitor at regular intervals as determined by the manufacturer’s recommendation. Calibration includes electronic testing of monitor components including sensors to ensure accuracy and proper function.

#### **2.3 Personal Gas Monitor**

A device worn by a person that measures airborne gases and provides a warning when alarm levels of hazardous gases are reached.

#### **2.4 Portable Gas Monitor**

Equipment used to test the condition of air prior to entering an area that could have a hazardous atmosphere. It will alarm when the alarm levels set on the equipment are reached.

Note: A personal gas monitor is more compact and designed to be worn by a person while in an area where there’s a potential for the accumulation of hazardous gases. Portable gas monitors can be used as a personal gas monitor if the employee wears the equipment while in the area of concern. There are also accessory kits for personal gas monitors to be able to test air conditions prior to entering an area that could have a hazardous atmosphere.

#### **2.5 15 Minute Contamination Limit / Short Term Exposure Limit (STEL)**

The average concentration of a chemical to which a person can be exposed for 15 minutes without experiencing irreversible tissue damage or health effects. STEL exposure is limited to four times per 24-hour period with at least one hour between exposures.

#### **2.6 Time-Weighted Average (TWA)**

The average concentration calculated using the duration of exposure to different concentrations of the chemical during a specific time period. In this way, higher and lower exposures are averaged over the day or week.

#### **2.7 8 Hour Contamination Limit / Threshold Limit Value (TLV)**

The concentration of a chemical in air to which, for a normal eight-hour work day and 40-hour work week, nearly all people may be exposed day after day without harmful effects.

### **3.0 METHOD / PRACTICE**



### **3.1 Selection**

- A documented hazard/aspect and risk assessment shall be performed by employees or contractors prior to entering a known or suspected hazardous atmosphere, to identify the potential for exposure to a hazardous atmosphere and the type of hazardous gases that may be present.
- Where a potential hazardous atmosphere has been identified, the atmosphere shall be tested for
  - Oxygen enrichment or deficiency;
  - Presences of flammable or explosive substances; and
  - Presence of hazardous concentration of airborne chemical substances.

### **3.2 Provisioning**

- Personal and portable gas monitors shall be supplied through SaskPower Central Stores or through the Division's purchasing process.

### **3.3 Use**

- Personal and portable gas monitors shall be worn where hazard/aspect identification and risk assessment identifies the requirement or when required by contractual or customer requirements.
- Employees using a personal or portable gas monitor shall be trained in its use.
- Personal gas monitors shall be used as per the manufacturer specifications.
- Alarm settings shall be set as per manufacturer's instructions.
  - Whenever possible, changes should be locked out and only performed by authorized personnel.
  - Settings shall be in accordance with legislated exposure levels.
  - Low alarm set points will be at the eight-hour contamination limit (TLV-TWA) and high set points will be at the 15-minute exposure limit (TLV-STEL) where applicable. Refer to Table 21 in the OH&S Regulations for exposure levels.
- When a monitor goes into alarm, it is indicating there may be a dangerous environment present.
  - The worker shall ensure the work area is evacuated immediately and in a safe manner, using the Division's Emergency Response Plan. If exposure time has not exceeded the regulatory requirement, evacuation may not be required.
  - Work shall not continue in the area until the source of the alarm has been identified and controlled.
  - If the alarm condition persists and the source of the alarm cannot be identified, the employee shall contact their direct supervisor and/or their safety representative.
  - The alarm and any corrective actions shall be documented in the hazard/aspect and risk assessment or job plan.

### **3.4 Bump Testing**

- Personal and portable gas monitors shall be bump tested prior to being put into service.
- Personal and portable gas monitors that are used only occasionally shall be bump tested monthly to ensure they continue to remain functional.
- Bump testing shall be tracked and verified using a monthly log containing the monitor model, serial number, date tested and test passed or failed.
  - For monitors not in regular use, the bump test record must clearly show the days in use (bump tested). Days when the monitor is not in use should be lined out, annotated "not in use" and initialed by the person responsible for the monitor.
  - Monitor systems with automatic bump test stations that self-record and track the test do not require the use of the Bump Test Record log.
- Personal and portable gas monitors which have a sensor that fails the bump test shall be removed from service and sent for repair or calibration.



- For all items in section 3.4 calibrations will be considered the equivalent of a bump test.

### **3.5 Care**

- Personal and portable gas monitors shall be cleaned, stored, maintained and calibrated according to the manufacturer specifications.

### **3.6 Training**

Training is required for all users of the monitors.

- Care and use of monitor.
- Bump testing methods and requirements.
- Calibration intervals.

## **4.0 REFERENCES**

- The Saskatchewan Occupational Health and Safety Regulations, 1996,
- SaskPower (located on SafetyNet)
  - Personal Protective Equipment Policy
  - Hazard/Aspect Control Policy
  - Hazard/Aspect and Risk Assessment Standard
  - Hazard/Aspect and Risk Assessment Standard
  - Portable Gas Monitor Standard
  - Safety Briefing #14: Personal and Portable Gas Monitor Standard