Symbol of Quality

MATERIAL SAFETY DATA SHEET

For

Mercury-In-Glass Thermometer

MANUFACTURER:
Miller & Weber, Inc.
1637 George Street
Ridgewood, NY 11385-5342

DATE: January 24, 2013
SUPERCEDES: MSDS dated 7/1/2009

EMERGENCY TELEPHONE:
Chem-Tel, Inc. 1-800-255-3924
Contract number: MIS0003159
Information email: info@millerweber.com

INFORMATION TELEPHONE:
M&W Telephone: (718) 821-7110
M&W Fax: (718) 821-1673
Web Address: www.millerweber.com

IDENTITY INFORMATION

Chemical Name: Mercury **CAS No.:** 7439-97-6 **Formula:** Hg **Chemical Family:** Element **Atomic Weight:** 200.59
HMIS Rating: Health: 3*, Flammability: 0, Reactivity: 0, PPG: See Special Protection Information Section Below.

HAZARDOUS INGREDIENTS

Components	PERCENT	OSHA PEL	NIOSH REL	ACGIH TLV
Mercury*	100%	0.1 mg/m3 ceiling limit	0.05 mg/m3 TWA	0.025 mg/m3 TWA

*Thermometer contains approximately one cc. of mercury. Hazardous only if broken.

PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point: 357 °C
Vapor Pressure (mm Hg): 0.0012@ 20 °C, 0.273 @ 100 °C
Vapor Density (Air=1): 7.0
Evaporation Rate: Depends on Temperature and pressure.
Solubility in Water: 0.002 grams/100 grams @ 20 °C
Appearance and Odor: Silver metallic liquid, mobile and odorless.

Specific Gravity (H20=1): 13.59
Melting Point: -39 °C
Percent Volatile by Volume: 100%

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): N/A **Flammable Limits:** LEL= N/A, UEL= N/A
Extinguishing Media: Appropriate for surrounding fire.
Special Fire Fighting Procedures: At high temperatures mercury vaporizes rapidly to form highly toxic, odorless, colorless fumes. Use air line or self contained breathing apparatus with full facepieces operated in positive pressure mode only.
Unusual Fire and Explosion Hazards: Mercury is not combustible, flammable or explosive, but will evaporate when heated creating toxic fumes which are both odorless and colorless. Will combine with other compounds (ie ammonia) to create unstable compounds.

REACTIVITY DATA

Stability: Stable **Conditions to Avoid:** Heat and high temperatures.
Incompatability (Materials to Avoid): Halogens, nitric acid, ammonia gas, aluminum, acetylene and acetylene products, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, oleum, sulfuric acid. Mercury will readily form amalgams with gold and silver.
Hazardous Decomposition or Byproducts: Mercury vapor.
Hazardous Polymerization: Will not occur.

CONTROL MEASURES

Respiratory Protection: If mercury spillage & PEL is exceeded use NIOSH certified respirator.
Ventilation: Local Exhaust: at point of origin. **Mechanical (General):** yes **Special:** N/A **Other:** N/A
Protective Gloves and Eye Protection: Gloves should be impervious to mercury. Goggles must protect against splashing.
Other Protective Equipment or Clothing: tighly woven (ie Tyvek) work clothing fitting closely about neck, wrists, and ankles should be worn. Clothing should be removed and washed frequently. No food, food stuffs, or tobacco products should be present in mercury areas. No smoking or eating in mercury areas.
Appropriate Hygienic Practices: Standard industrial practice for working with mercury should be observed.

HEALTH HAZARD DATA

Mercury is not listed as a carcinogen by the NTP, IARC or OSHA. Mercury is a cumulative poison that concentrates in the brain, kidneys and liver. It is very hazardous when spilled or heated.

Routes of Entry: Inhalation, eyes, skin, ingestion.
Target Organs: Skin, eyes, respiratory system, central nervous system, kidneys, liver.

Signs and Symptoms of Exposure:

1. **Acute Overexposure:** Inhalation of high levels of mercury vapor can lead to severe respiratory irritation, chest pains, coughing and breathing difficulties which may be fatal if respiratory irritation is severe. Damage to the target organs can occur. These symptoms may also be accompanied by some or all symptoms of chronic poisoning.

2. **Chronic Overexposure:** Exposure to low levels of mercury vapor may result in gum and mouth inflammation (accompanied by excess salivation & metallic taste), gingivitis, irritability, tremors, depression, personality changes & nervousness, stomatitis. Chronic effects of overexposure can result in damage to the target organs.

Medical Conditions Generally Aggravated by Exposure: persons with chronic diseases such as tuberculosis, kidney disease, liver disease and alcoholism or are in poor physical condition should be excluded from continuous assignment where mercury is present. The kidney accumulates mercury and damage is usually caused by acute poisoning.

Emergency and First Aid Procedures: CONTACT A QUALIFIED PHYSICIAN

1. **Inhalation:** Remove person from source of exposure to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Chronic inhalation of vapors or dust over long periods of time may result in mercury poisoning.
2. **Eyes:** Occasional accidental contact with eyes is usually harmless if washed out immediately. Hold upper and lower eyelids open, wash eye thoroughly with plenty of water for 15 minutes. Eye and mucous membrane irritant. Consult a physician.
3. **Skin:** Wash exposed area thoroughly with soap and water. Can penetrate undamaged skin with subsequent absorption by circulatory system. Can cause dermatitis and allergies.
4. **Ingestion:** Accidental swallowing or ingestion of mercury is usually harmless. Do not induce vomiting. Consult a physician.

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken if Material is Released or Spilled: Use appropriate respiratory protection if PEL is exceeded and proper protective clothing. Clean up spills immediately with vacuum equipment that has a filtered exhaust and mercury trap designed for mercury cleanup or a commercial mercury spill clean up kit. Do not dry sweep. Decontaminate with a mercury decontaminant. Keep collected mercury in sealed container for disposal. Avoid skin contact with mercury, wash contacted area with soap and water.
Waste Disposal Method: Remove mercury and materials that have come in contact with mercury to proper disposal area. Mercury is recyclable. Do not put in garbage, flush in sewer, or incinerate. Dispose of in accordance with all Federal, State and Local environmental regulations. Do not dispose in landfill.
Precautions to Be Taken in Handling and Storing: Handle and store thermometer with proper care.
Other Precautions: None.

REGULATORY INFORMATION

Reportable Quantity: 1 pound. The Superfund Amendments and Reauthorization Act (SARA) section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). This substance is also reportable under CERCLA Section 103. RCRA Hazardous Waste No. U151.

NIOSH (RTEC) No.: OV4550000

Transportation Data:

For Transportation via small package carrier, UPS Ground or Air

Shipping Name: Mercury *contained in Manufactured Articles* **UN ID No.** UN2809 **Hazard Class:** Class 8
Packing Group: III **Packaging:** 49 CFR 173.164 **Hazardous Materials Label:** CORROSIVE
May not be regulated when shipped via UPS ground.

For Transportation per 49 CFR 172.101

Shipping Name: Mercury contained in Manufactured Articles. **UN ID No.** UN3506 **Hazard Class:** Class 8, 6.1
Packing Group: III **Packaging:** 49 CFR 173.164
Hazardous Materials Label: CORROSIVE & POISON INHALATION HAZARD* ***Special Provisions:** A191

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

THIS THERMOMETER IS NOT TO BE OFFERED FOR SALE INTO ANY STATE WHERE THE SALE OF MERCURY-IN-GLASS THERMOMETERS IS PROHIBITED.

Prepared by: Deanne Miller Emory, President 1/24/2013

Symbol of Quality

MATERIAL SAFETY DATA SHEET
For
Mercury-In-Glass Thermometer

MANUFACTURER:
Miller & Weber, Inc.
1637 George Street
Ridgewood, NY 11385-5342

DATE: January 24, 2013
SUPERCEDES: MSDS dated 7/1/2009

EMERGENCY TELEPHONE:
Chem-Tel, Inc. 1-800-255-3924
Contract number: MIS0003159
Information email: info@millerweber.com

INFORMATION TELEPHONE:
M&W Telephone: (718) 821-7110
M&W Fax: (718) 821-1673
Web Address: www.millerweber.com

IDENTITY INFORMATION

Chemical Name: Mercury **CAS No.:** 7439-97-6 **Formula:** Hg **Chemical Family:** Element **Atomic Weight:** 200.59
HMIS Rating: Health: 3*, Flammability: 0, Reactivity: 0, PPG: See Special Protection Information Section Below.

HAZARDOUS INGREDIENTS

Components	PERCENT	OSHA PEL	NIOSH REL	ACGIH TLV
Mercury*	100%	0.1 mg/m3 ceiling limit	0.05 mg/m3 TWA	0.025 mg/m3 TWA

*Thermometer contains approximately one cc. of mercury. Hazardous only if broken.

PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point: 357 °C
Vapor Pressure (mm Hg): 0.0012@ 20 °C, 0.273 @ 100 °C
Vapor Density (Air=1): 7.0
Evaporation Rate: Depends on Temperature and pressure.
Solubility in Water: 0.002 grams/100 grams @ 20 °C
Appearance and Odor: Silver metallic liquid, mobile and odorless.

Specific Gravity (H20=1): 13.59
Melting Point: -39 °C
Percent Volatile by Volume: 100%

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): N/A **Flammable Limits:** LEL= N/A, UEL= N/A
Extinguishing Media: Appropriate for surrounding fire.
Special Fire Fighting Procedures: At high temperatures mercury vaporizes rapidly to form highly toxic, odorless, colorless fumes. Use air line or self contained breathing apparatus with full facepieces operated in positive pressure mode only.
Unusual Fire and Explosion Hazards: Mercury is not combustible, flammable or explosive, but will evaporate when heated creating toxic fumes which are both odorless and colorless. Will combine with other compounds (ie ammonia) to create unstable compounds.

REACTIVITY DATA

Stability: Stable **Conditions to Avoid:** Heat and high temperatures.
Incompatability (Materials to Avoid): Halogens, nitric acid, ammonia gas, aluminum, acetylene and acetylene products, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, oleum, sulfuric acid. Mercury will readily form amalgams with gold and silver.
Hazardous Decomposition or Byproducts: Mercury vapor.
Hazardous Polymerization: Will not occur.

CONTROL MEASURES

Respiratory Protection: If mercury spillage & PEL is exceeded use NIOSH certified respirator.
Ventilation: Local Exhaust: at point of origin. **Mechanical (General):** yes **Special:** N/A **Other:** N/A
Protective Gloves and Eye Protection: Gloves should be impervious to mercury. Goggles must protect against splashing.
Other Protective Equipment or Clothing: tighly woven (ie Tyvek) work clothing fitting closely about neck, wrists, and ankles should be worn. Clothing should be removed and washed frequently. No food, food stuffs, or tobacco products should be present in mercury areas. No smoking or eating in mercury areas.
Appropriate Hygienic Practices: Standard industrial practice for working with mercury should be observed.

HEALTH HAZARD DATA

Mercury is not listed as a carcinogen by the NTP, IARC or OSHA. Mercury is a cumulative poison that concentrates in the brain, kidneys and liver. It is very hazardous when spilled or heated.

Routes of Entry: Inhalation, eyes, skin, ingestion.
Target Organs: Skin, eyes, respiratory system, central nervous system, kidneys, liver.

Signs and Symptoms of Exposure:

1. **Acute Overexposure:** Inhalation of high levels of mercury vapor can lead to severe respiratory irritation, chest pains, coughing and breathing difficulties which may be fatal if respiratory irritation is severe. Damage to the target organs can occur. These symptoms may also be accompanied by some or all symptoms of chronic poisoning.

2. **Chronic Overexposure:** Exposure to low levels of mercury vapor may result in gum and mouth inflammation (accompanied by excess salivation & metallic taste), gingivitis, irritability, tremors, depression, personality changes & nervousness, stomatitis. Chronic effects of overexposure can result in damage to the target organs.

Medical Conditions Generally Aggravated by Exposure: persons with chronic diseases such as tuberculosis, kidney disease, liver disease and alcoholism or are in poor physical condition should be excluded from continuous assignment where mercury is present. The kidney accumulates mercury and damage is usually caused by acute poisoning.

Emergency and First Aid Procedures: CONTACT A QUALIFIED PHYSICIAN

1. **Inhalation:** Remove person from source of exposure to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Chronic inhalation of vapors or dust over long periods of time may result in mercury poisoning.
2. **Eyes:** Occasional accidental contact with eyes is usually harmless if washed out immediately. Hold upper and lower eyelids open, wash eye thoroughly with plenty of water for 15 minutes. Eye and mucous membrane irritant. Consult a physician.
3. **Skin:** Wash exposed area thoroughly with soap and water. Can penetrate undamaged skin with subsequent absorption by circulatory system. Can cause dermatitis and allergies.
4. **Ingestion:** Accidental swallowing or ingestion of mercury is usually harmless. Do not induce vomiting. Consult a physician.

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken If Material is Released or Spilled: Use appropriate respiratory protection if PEL is exceeded and proper protective clothing. Clean up spills immediately with vacuum equipment that has a filtered exhaust and mercury trap designed for mercury cleanup or a commercial mercury spill clean up kit. Do not dry sweep. Decontaminate with a mercury decontaminant. Keep collected mercury in sealed container for disposal. Avoid skin contact with mercury, wash contacted area with soap and water.
Waste Disposal Method: Remove mercury and materials that have come in contact with mercury to proper disposal area. Mercury is recyclable. Do not put in garbage, flush in sewer, or incinerate. Dispose of in accordance with all Federal, State and Local environmental regulations. Do not dispose in landfill.
Precautions to Be Taken in Handling and Storing: Handle and store thermometer with proper care.
Other Precautions: None.

REGULATORY INFORMATION

Reportable Quantity: 1 pound. The Superfund Amendments and Reauthorization Act (SARA) section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). This substance is also reportable under CERCLA Section 103. RCRA Hazardous Waste No. U151.

NIOSH (RTEC) No.: OV4550000

Transportation Data:

For Transportation via small package carrier, UPS Ground or Air

Shipping Name: Mercury *contained in Manufactured Articles* **UN ID No.** UN2809 **Hazard Class:** Class 8
Packing Group: III **Packaging:** 49 CFR 173.164 **Hazardous Materials Label:** CORROSIVE
May not be regulated when shipped via UPS ground.

For Transportation per 49 CFR 172.101

Shipping Name: Mercury contained in Manufactured Articles. **UN ID No.** UN3506 **Hazard Class:** Class 8, 6.1
Packing Group: III **Packaging:** 49 CFR 173.164
Hazardous Materials Label: CORROSIVE & POISON INHALATION HAZARD* ***Special Provisions:** A191

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

THIS THERMOMETER IS NOT TO BE OFFERED FOR SALE INTO ANY STATE WHERE THE SALE OF MERCURY-IN-GLASS THERMOMETERS IS PROHIBITED.

Prepared by: Deanne Miller Emory, President 1/24/2013

Symbol of Quality

MATERIAL SAFETY DATA SHEET
For
Mercury-In-Glass Thermometer

MANUFACTURER:
Miller & Weber, Inc.
1637 George Street
Ridgewood, NY 11385-5342

DATE: January 24, 2013
SUPERCEDES: MSDS dated 7/1/2009

EMERGENCY TELEPHONE:
Chem-Tel, Inc. 1-800-255-3924
Contract number: MIS0003159
Information email: info@millerweber.com

INFORMATION TELEPHONE:
M&W Telephone: (718) 821-7110
M&W Fax: (718) 821-1673
Web Address: www.millerweber.com

IDENTITY INFORMATION

Chemical Name: Mercury **CAS No.:** 7439-97-6 **Formula:** Hg **Chemical Family:** Element **Atomic Weight:** 200.59
HMIS Rating: Health: 3*, Flammability: 0, Reactivity: 0, PPG: See Special Protection Information Section Below.

HAZARDOUS INGREDIENTS

Components	PERCENT	OSHA PEL	NIOSH REL	ACGIH TLV
Mercury*	100%	0.1 mg/m3 ceiling limit	0.05 mg/m3 TWA	0.025 mg/m3 TWA

*Thermometer contains approximately one cc. of mercury. Hazardous only if broken.

PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point: 357 °C
Vapor Pressure (mm Hg): 0.0012@ 20 °C, 0.273 @ 100 °C
Vapor Density (Air=1): 7.0
Evaporation Rate: Depends on Temperature and pressure.
Solubility in Water: 0.002 grams/100 grams @ 20 °C
Appearance and Odor: Silver metallic liquid, mobile and odorless.

Specific Gravity (H20=1): 13.59
Melting Point: -39 °C
Percent Volatile by Volume: 100%

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): N/A **Flammable Limits:** LEL= N/A, UEL= N/A
Extinguishing Media: Appropriate for surrounding fire.
Special Fire Fighting Procedures: At high temperatures mercury vaporizes rapidly to form highly toxic, odorless, colorless fumes. Use air line or self contained breathing apparatus with full facepieces operated in positive pressure mode only.
Unusual Fire and Explosion Hazards: Mercury is not combustible, flammable or explosive, but will evaporate when heated creating toxic fumes which are both odorless and colorless. Will combine with other compounds (ie ammonia) to create unstable compounds.

REACTIVITY DATA

Stability: Stable **Conditions to Avoid:** Heat and high temperatures.
Incompatability (Materials to Avoid): Halogens, nitric acid, ammonia gas, aluminum, acetylene and acetylene products, boron phosphodiiodide, chlorine, chlorine dioxide, methyl azide, sodium carbide, oleum, sulfuric acid. Mercury will readily form amalgams with gold and silver.
Hazardous Decomposition or Byproducts: Mercury vapor.
Hazardous Polymerization: Will not occur.

CONTROL MEASURES

Respiratory Protection: If mercury spillage & PEL is exceeded use NIOSH certified respirator.
Ventilation: Local Exhaust: at point of origin. **Mechanical (General):** yes **Special:** N/A **Other:** N/A
Protective Gloves and Eye Protection: Gloves should be impervious to mercury. Goggles must protect against splashing.
Other Protective Equipment or Clothing: tighly woven (ie Tyvek) work clothing fitting closely about neck, wrists, and ankles should be worn. Clothing should be removed and washed frequently. No food, food stuffs, or tobacco products should be present in mercury areas. No smoking or eating in mercury areas.
Appropriate Hygienic Practices: Standard industrial practice for working with mercury should be observed.

HEALTH HAZARD DATA

Mercury is not listed as a carcinogen by the NTP, IARC or OSHA. Mercury is a cumulative poison that concentrates in the brain, kidneys and liver. It is very hazardous when spilled or heated.

Routes of Entry: Inhalation, eyes, skin, ingestion.
Target Organs: Skin, eyes, respiratory system, central nervous system, kidneys, liver.

Signs and Symptoms of Exposure:

1. **Acute Overexposure:** Inhalation of high levels of mercury vapor can lead to severe respiratory irritation, chest pains, coughing and breathing difficulties which may be fatal if respiratory irritation is severe. Damage to the target organs can occur. These symptoms may also be accompanied by some or all symptoms of chronic poisoning.

2. **Chronic Overexposure:** Exposure to low levels of mercury vapor may result in gum and mouth inflammation (accompanied by excess salivation & metallic taste), gingivitis, irritability, tremors, depression, personality changes & nervousness, stomatitis. Chronic effects of overexposure can result in damage to the target organs.

Medical Conditions Generally Aggravated by Exposure: persons with chronic diseases such as tuberculosis, kidney disease, liver disease and alcoholism or are in poor physical condition should be excluded from continuous assignment where mercury is present. The kidney accumulates mercury and damage is usually caused by acute poisoning.

Emergency and First Aid Procedures: CONTACT A QUALIFIED PHYSICIAN

1. **Inhalation:** Remove person from source of exposure to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Chronic inhalation of vapors or dust over long periods of time may result in mercury poisoning.
2. **Eyes:** Occasional accidental contact with eyes is usually harmless if washed out immediately. Hold upper and lower eyelids open, wash eye thoroughly with plenty of water for 15 minutes. Eye and mucous membrane irritant. Consult a physician.
3. **Skin:** Wash exposed area thoroughly with soap and water. Can penetrate undamaged skin with subsequent absorption by circulatory system. Can cause dermatitis and allergies.
4. **Ingestion:** Accidental swallowing or ingestion of mercury is usually harmless. Do not induce vomiting. Consult a physician.

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken if Material is Released or Spilled: Use appropriate respiratory protection if PEL is exceeded and proper protective clothing. Clean up spills immediately with vacuum equipment that has a filtered exhaust and mercury trap designed for mercury cleanup or a commercial mercury spill clean up kit. Do not dry sweep. Decontaminate with a mercury decontaminant. Keep collected mercury in sealed container for disposal. Avoid skin contact with mercury, wash contacted area with soap and water.
Waste Disposal Method: Remove mercury and materials that have come in contact with mercury to proper disposal area. Mercury is recyclable. Do not put in garbage, flush in sewer, or incinerate. Dispose of in accordance with all Federal, State and Local environmental regulations. Do not dispose in landfill.
Precautions to Be Taken in Handling and Storing: Handle and store thermometer with proper care.
Other Precautions: None.

REGULATORY INFORMATION

Reportable Quantity: 1 pound. The Superfund Amendments and Reauthorization Act (SARA) section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). This substance is also reportable under CERCLA Section 103. RCRA Hazardous Waste No. U151.

NIOSH (RTEC) No.: OV4550000

Transportation Data:

For Transportation via small package carrier, UPS Ground or Air

Shipping Name: Mercury *contained in Manufactured Articles* **UN ID No.** UN2809 **Hazard Class:** Class 8
Packing Group: III **Packaging:** 49 CFR 173.164 **Hazardous Materials Label:** CORROSIVE
May not be regulated when shipped via UPS ground.

For Transportation per 49 CFR 172.101

Shipping Name: Mercury contained in Manufactured Articles. **UN ID No.** UN3506 **Hazard Class:** Class 8, 6.1
Packing Group: III **Packaging:** 49 CFR 173.164
Hazardous Materials Label: CORROSIVE & POISON INHALATION HAZARD* ***Special Provisions:** A191

California Proposition 65: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

THIS THERMOMETER IS NOT TO BE OFFERED FOR SALE INTO ANY STATE WHERE THE SALE OF MERCURY-IN-GLASS THERMOMETERS IS PROHIBITED.

Prepared by: Deanne Miller Emory, President 1/24/2013