

Chemical and Gas Hazards

Objectives

- **Explain the purpose of the MSDS form**
- **List several types of chemical hazards in the healthcare environment**
- **List the safety precautions taken when working with medical gas cylinders**
- **Identify the medical gas cylinders by their color codes**
- **Describe mercury clean up procedures**

Material Safety Data Sheet (MSDS)

“To inform industrial purchasers and users of hazardous chemicals of reasonably foreseeable physical and chemical hazards that may arise from the use of those chemicals.”

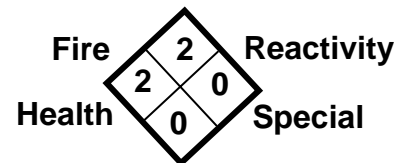
The MSDS

- **Product Identification**
- **Composition**
- **Hazardous Ingredients**
- **First Aid Measures**
- **Fire Fighting Measures**
- **Accidental Release Measures**
- **Handling and Storage Information**
- **Exposure Control or Personal Protection**
- **Physical and Chemical Properties**
- **Stability or Reactivity of the Chemical**
- **Toxicological Information**
- **Ecological Information**
- **Disposal Considerations**
- **Transportation Data**
- **Regulatory Information**
- **Other**



WD- 40

Material Safety Data Sheet



NFPA

I. Product Identification

Manufacturer: WD- 40 Company

Address: 1061 Cudahy Place (92110)

P.O. Box 80607

San Diego, California

92138-0607

Telephone:

Emergency only: 1-800-424-9300 (CHEMTREC)

Information: (619) 275- 1400

Chemical Name: Organic Mixture

Trade Name: WD- 40 Aerosol

II. Hazardous Ingredients

Chemical Name	CAS Number	%	Exposure Limit ACGIH/OSHA
Aliphatic Petroleum Distillates	8052-41-2	45 – 50	100 ppm PEL
Petroleum Base Oil	64742-65-0	15 – 25	5 mg/M3 TWA (mist)
LVP Hydrocarbon Fluid	64742-47-8	12 – 18	1200 mg/M3 TWA
Carbon Dioxide	124-38-9	2 – 3	5000 ppm PEL
Non- hazardous Ingredients		< 10	

III. Physical Data

Boiling Point:	323°F (minimum)	Evaporation Rate:	Not Determined
Vapor Density (air=1)	Greater than 1	Vapor Pressure:	110 ± 5 PSI @ 70°F
Solubility in Water:	insoluble	Appearance:	Light Amber
Specific Gravity (H2O-1)	0.832 @72°F	Odor:	Characteristic Odor
Percent Volatile (volume):	74%	VOC:	412 grams/liter (49.5%)

IV. Fire and Explosion

Flash Point:	131°F Tag Closed Cup
Flammable Limits:	(Solvent Portion) [LeI] 1.0% [Uei] 6.0%
Extinguishing Media:	CO ₂ , Dry Chemical, Foam
Special Fire Fighting Procedures:	Contents Under Pressure
Unusual Fire and Explosion Hazards:	FLAMMABLE – U.F.C. level 3 AEROSOL

V. Health Hazard/ Route(s) of Entry

Threshold Limit Value	Aliphatic Petroleum Distillates (Stoddard Solvent) lowest TLV
Symptoms of Overexposure	
Inhalation (Breathing):	May cause anesthesia, headache, dizziness, nausea and upper resp
Skin contact:	May cause drying of skin and/or irritation
Eye contact:	May cause irritation, tearing and redness
Ingestion (Swallowed):	May cause irritation, nausea, vomiting and diarrhea

First Aid Emergency Procedures

Ingestion (Swallowed):	Do not induce vomiting, seek medical attention
Eye contact:	Immediately flush eyes with large amounts of water for 15 minutes
Skin contact:	Wash with soap and water
Inhalation (Breathing):	Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen

Pre- existing medical conditions such as eye, skin and respiratory disorders may be aggravated by exposure.

DANGER!

Aspiration Hazard:	If swallowed, can enter lungs and may cause chemical pneumonitis Do not induce vomiting. Call physical immediately.
Suspected Cancer Agent Yes___ No__X__	The components in this mixture have been found to be noncarcinogenic by NTP, IARC and OSHA

VI. Reactivity Data

Stability:	Stable <input checked="" type="checkbox"/>	Unstable <input type="checkbox"/>
Conditions to avoid:	NA	
Incompatibility:	Strong oxidizing agents	
Hazardous decomposition products:	Thermal decomposition may yield carbon monoxide and/or carbon dioxide	
Hazardous polymerization:	May occur <input type="checkbox"/>	Will not occur <input checked="" type="checkbox"/>

VII. Spill or Leak Procedures

Spill Response Procedures

Spill unlikely from aerosol cans. Leaking cans should be placed in a plastic bag or open pail until pressure has dissipated.

Waste Disposal Method

Empty aerosol cans should not be punctured or incinerated; bury in land fill. Liquid should be incinerated or buried in land fill. Dispose of in accordance with local, state and federal regulations.

VIII. Special Handling Information

Ventilation:	Sufficient to keep solvent vapor less than TLV.
Respiratory Protection:	Advised when concentrations exceed TLV.
Protective Gloves:	Advised to prevent skin irritation.
Eye Protection:	Approved eye protections to safeguard against potential eye contact, irritation or injury.
Other Protective Equipment:	None required.

IX. Special Precautions

Keep from sources of ignition. Avoid excessive inhalation of spray particles, do not take internally. Do not Puncture, incinerate or store container above 120°F. Exposure to heat may cause bursting. Keep can away from electrical current or battery terminals. Electrical arcing can cause burn-through (puncture) which may result in flash fire, causing serious injury. Keep from children.

X. Transportation Data (49 CFR 172.101)

Domestic Surface

Description:	Consumer commodity
Hazard Class:	ORM-D
ID No.	None
Label Required:	Consumer commodity (ORM-D)

XI. Regulatory Information

All ingredients for this product are listed on the TSCA inventory.

SARA Title III chemicals:	None
California Prop 65 chemicals:	None
CERCLA reportable quantity:	None
RCRA hazardous waste no:	D001 (Ignitable)

Medical Gas Cylinder Precautions

- **No oil**
- **Check for gas leaks**
- **Verify type by markings**
- **Never repair or alter the cylinder**
- **Do not drop the cylinder**
- **Do not drag, slide or roll the cylinder**
- **Use the correct regulator for the cylinder**
- **Never cross connect a cylinder with a different type of gas**

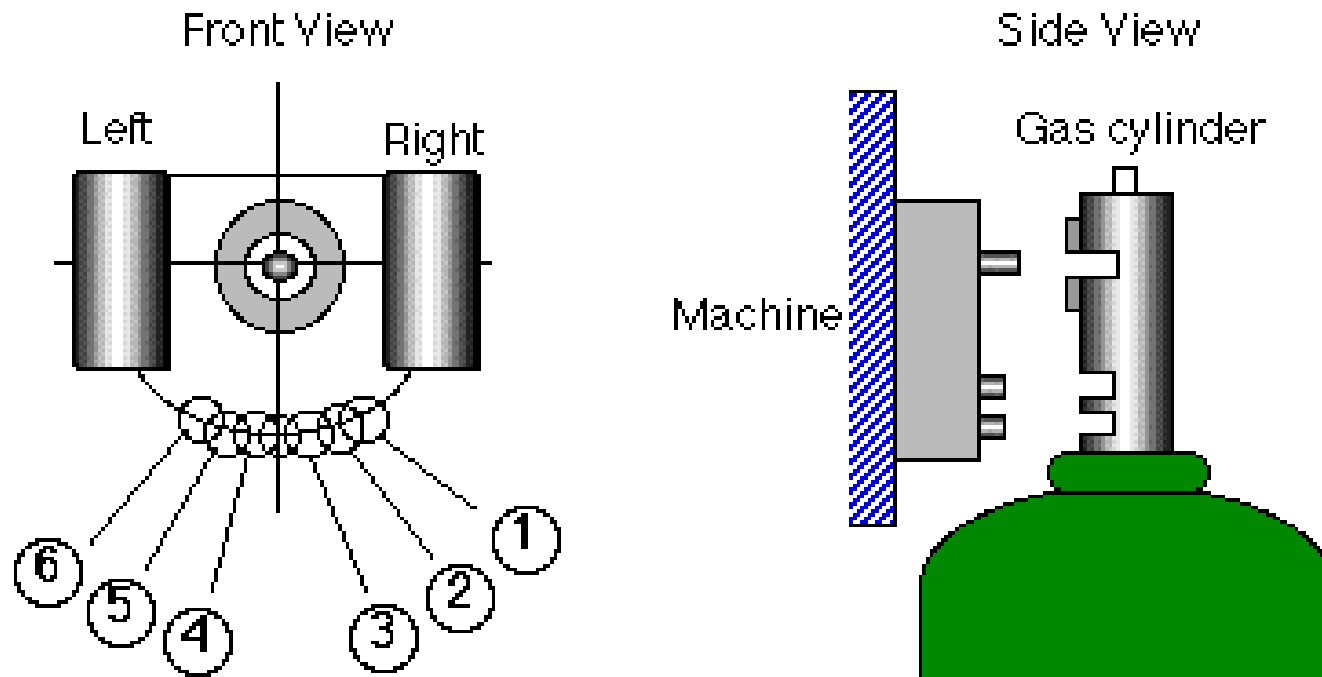


E Cylinder

H Cylinder

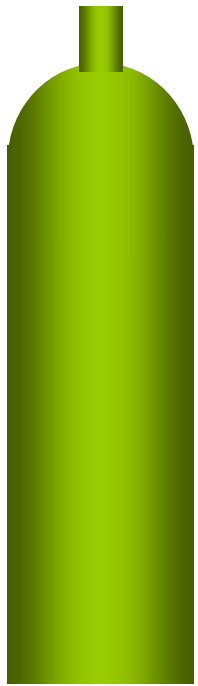


Pin Index Safety System for Medical Gas Cylinders

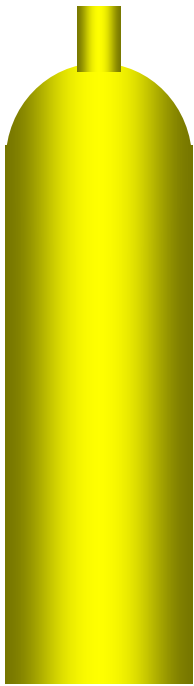


Gas	Index Pins
Air	1 & 5
CO ₂ Mix (CO ₂ < 7%)	2 & 6
CO ₂ Mix (CO ₂ > 7%)	1 & 6
Cyclopropane	3 & 6
Ethylene	1 & 3
He-O ₂ (< 80%)	2 & 4
He-O ₂ (> 80%)	4 & 6
Nitrous Oxide	3 & 5
Oxygen	2 & 5





Oxygen



**Medical
Air**



**Nitrous
Oxide**



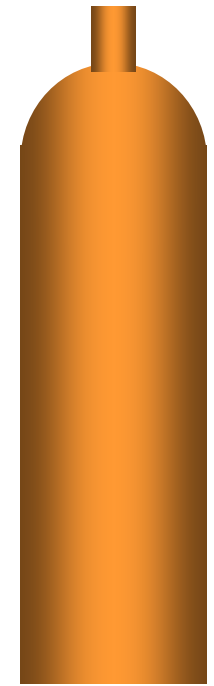
Nitrogen



Helium



**Carbon
Dioxide**



**Cyclo
propane**







HAZARDOUS WASTE

ACCUMULATION

START DATE 4-17-00

CONTENTS MERCURY - CONTAM

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTE!

Lab Safety Products, Inc.

Mercury Cannot Be Thrown in the Trash!



Disposal must be in accordance with local and state regulations