CUST440

HILLSBORO ELEMENTARY SCHOOLS
215 S.E. 6th Ave.
HILLSBORO, OR 97123

MATERIAL SAFETY DATA SHEET CM 0117

I. PRODUCT IDENTIFICATION

Manufacturer:	WD-40 Company	Telephone:	
		Emergency Only:	1 (800) 424-9300 (CHEMTREC)
Address:	1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California 92138-9021	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	8052-41-3	50	100 ppm (PEL)
A-70 Hydrocarbon Propellant	68476-85-7	25	1000 ppm (PEL)
Petroleum Base Oil	64742-65-0	> 15	5 mg/M³ (TWA)
Non-hazardous Ingredients		< 10	

III. PHYSICAL DATA

Boiling Point:	NA	Evaporation Rate:	Not determined
Vapor Density (air = 1):	Greater than 1	Vapor Pressure:	55±5 PSI @ 70°F
Solubility in Water:	Insoluble	Appearance:	Light amber
Specific Gravity (H_2O = 1):	.710 @ 70°F	Odor:	Characteristic odor
Percent Volatile (volume):	80%		

IV. FIRE AND EXPLOSION

Flash Point:	NA to aerosol cans
Flammable Limits:	(propellant portion) [Lel] 1.8% [Uel] 9.5%
Extinguishing Media:	CO_2, Dry Chemical, Foam
Special Fire Fighting Procedures:	None
Unusual Fire and Explosion Hazards:	Considered "extremely flammable" under Consumer Product Safety Commission regulations.

V. HEALTH HAZARD / ROUTE(S) OF ENTRY

Threshold Limit Value

Aliphatic Petroleum Distillates (Stoddard solvent) lowest TLV (ACGIH 100 ppm.)

Symptoms of Overexposure

Inhalation (Breathing): May cause anesthesia, headache, dizziness, nausea and upper respiratory irritation.
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.

DANGER!

Aspiration Hazard: If swallowed can enter lungs and may cause chemical pneumonitis. Do not induce vomiting. Call Physician 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__X__	Unstable_____
Conditions to avoid:	NA	
Incompatability:	Strong oxidizing materials	
Hazardous decomposition products:	Thermal decomposition may yield carbon monoxide and/or carbon dioxide.	
Hazardous polymerization:	May occur_____	Will not occur__X__

VII. SPILL OR LEAK PROCEDURES

Spill Response Procedures

Spill unlikely from aerosol cans. Leaking cans should be placed in 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 possible skin irritation.
Eye Protection:	Approved eye protection to safeguard against potential eye contact, irritation or injury.
Other Protective Equipment:	None required.

IX. SPECIAL PRECAUTIONS

Keep from sources of ignition, do not take internally. Avoid excessive inhalation of spray particles. Do not puncture, incinerate or store container above 120°F. Keep from children.

X. TRANSPORTATION DATA

Domestic Surface

Description:	Consumer Commodity
Hazard Class:	ORM-D
ID No.:	NONE
Label Required:	Consumer Commodity (ORM-D)

Domestic Air

Description:	Consumer Commodity (Flammable Gas-Aerosol products)
Hazard Class:	ORM-D
ID No:	NONE
Label Required:	Consumer Commodity (ORM-D-AIR)

SIGNATURE: R. Miles TITLE: Technical Director

REVISION DATE: March 1990 SUPERSEDES: January 1989

NA = Not applicable NDA = No data available < = Less than > = More than

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APPEARANCE	Clear or slightly cloudy	PERCENT VOLATILE (MAXIMUM)	78% by weight aliphatic petroleum distillate
COLOR	Light amber	POUR POINT	Less than -100° F.
ODOR	Very slight characteristic pleasant odor	LOW TEMPERATURE STABILITY	Excellent
SPECIFIC GRAVITY	800 ± .020 at 72° F.	COVERAGE	600 to 1000 sq. ft. per gallon
VISCOSITY	27.5 ± 1.0 sec. Zahn # 1 at 72° F.	BOILING POINT (INITIAL)	300° F. (minimum)
FLASH POINT (MINIMUM)	110° F. open cup	WEIGHT, applied coating	3.4×10^{-4} lbs./sq. ft.
PERCENT NON-VOLATILE (MINIMUM)	22% by weight	THICKNESS	.0001 to .0003 inch

Properties

CORROSION PROTECTION:
(on freshly sanded mild steel panels)

EXPOSURE	RESULTS
Humidity (JAN-H-792)	No rust after 1000 hours
Salt Spray (FED STD 151)	No rust after 50 hours
Salt Spray (FED STD 151)	Rust beginning after 100 hours

Under actual conditions the duration of protection obtained using WD-40 will vary with the type of material being protected and the conditions of exposure. Generally, on mild steel the protection under various conditions will be approximately as follows:

1. Covered or indoor storage 1 year or longer
2. Protected exterior storage 6 months to 1 year
3. Normal exterior exposure 30 to 60 days
4. Severe exterior exposure 15 to 30 days (on or very near the beach, subject to high humidity, salt spray and salt fog)

If longer protection is desired, WD-40 should be lightly reapplied when necessary.

LUBRICATION: Dynamic coefficient of friction

BEARING PRESSURE	COEFFICIENT	TEST
100 psi	0.112	Heat treated 4340 steel
1000 psi	0.114	with normal blue oxide
2000 psi	0.129	film against itself lubricated
3000 psi	0.138	with WD-40
4000 psi	0.145	

ELECTRICAL: Dielectric strength ASTM D-877 12,000 V. per 0.100 in.

Contact resistance ASTM B-182 modified

	BARE CONTACTS	WD-40 TREATED CONTACTS	CONTACT RESISTANCE OF FILM
before cycling	0.0066	0.0083 ohm	0.0017 ohm
after 5 cycles	0.0067	0.0085 ohm	0.0018 ohm
after 100 cycles	0.0069	0.0086 ohm	0.0017 ohm
after 1000 cycles	0.0074	0.0085 ohm	0.0011 ohm
after 20,000 cycles	0.0083	0.0098 ohm	0.0016 ohm

Effect on Materials

GENERAL: Nearly all materials react to WD-40 as they would to high grade aliphatic petroleum spirits with the same exposure, i.e., spray, quick dip or prolonged immersion. WD-40 contains no silicon, teflon or chlorofluorocarbons.

RUBBER: No visible effects on surfaces of various types of rubber sprayed with WD-40. Certain types of rubber will swell upon prolonged immersion in WD-40.

HIGH STRENGTH STEELS (for hydrogen embrittlement): Certified SAFE according to the Lawrence Hydrogen Effusion Test.

FABRICS: The following fabrics were exposed to WD-40 with no effect, except slight staining which was readily removed with naphtha or dry cleaning solvent: Nylon, Orlon, Wool, Dacron, Cotton.

PAINTED SURFACES: Many types of paint on various surfaces have been exposed to WD-40 with no effect. Wax polishes and certain wax coatings may be softened by WD-40.

PLASTICS: The following plastics were immersed in WD-40 for 168 hours with no visible effects:

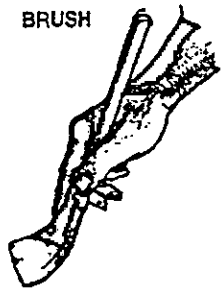
Polyethylene	Formica	Epoxy	Delrin
Polypropylene	Acrylic	Vinyl	
Teflon	Polyester	Nylon	

Clear polycarbonate and polystyrene may stress craze or crack in contact with WD-40.

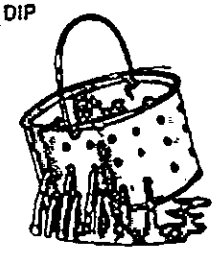
Application

SPRAY

BRUSH



DIP

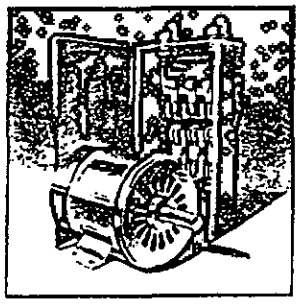


NOTE:
Application of permanent coatings over WD-40: Best results will be obtained when the surface is cleaned. Mineral spirits, lacquer thinner, vapor degreasing or alkaline cleaner are suitable.

DANGER: COMBUSTIBLE. HARMFUL OR FATAL IF SWALLOWED. Contains petroleum distillates. If swallowed, do not induce vomiting. Call physician. Keep from children.

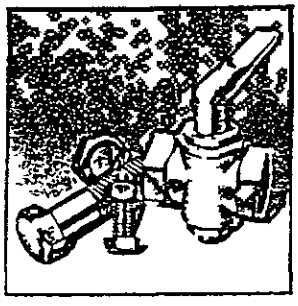
WD-40 COMPANY, 1061 Cudahy Place, San Diego, California 92110
(619) 275-1400 FAX (619) 275-5823

WD-40's Five Basic Functions.



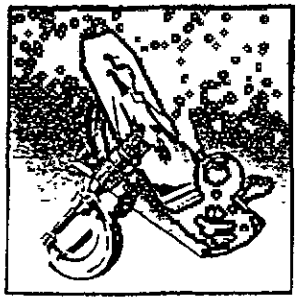
Displaces Moisture.

WD-40® is formulated for ultra-high surface attraction to metal. It completely covers surfaces, including microscopic irregularities, even in the presence of moisture. In fact, WD-40 goes under surface moisture and establishes a protective barrier between the moisture and the parent metal. WD-40 is a non-conductor of electricity and quickly eliminates moisture-induced short circuits.



Penetrates.

WD-40's ultra-high surface attraction results in a super penetrating action that loosens rust-to-metal bonds and frees stuck, frozen, or rusted metal parts. The lubricating properties of WD-40 then keep these parts working freely.

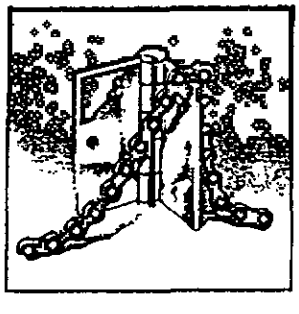


Protects.

WD-40 deposits corrosion-resistant ingredients over the entire surface area, including microscopic irregularities. This protective barrier shields against moisture and other corrosive elements. WD-40's moisture-displacement capability also precludes the possibility of a small moisture pocket causing future problems.

Cleans.

WD-40's ultra-high surface attraction enables it to get under dirt, grime, caked grease, and oil to clean the surface at the same time it forms a corrosion-resistant barrier. It also dissolves most adhesives, allowing for the easy removal of labels and excess bonding materials.



Lubricates.

WD-40's ultra-high surface attraction assures the lubricating ingredients in WD-40 will be widely dispersed and tenaciously held to all moving parts. WD-40 contains no silicone or other additives that attract dust and dirt causing a buildup of gummy, greasy residues.