

SwitchArmor™ DRY FILM SWITCH LUBRICANT

Whitmore Rail is proud to introduce SwitchArmor™. This innovative product is the result of a lengthy period of research and testing. It is a dry film lubricant specifically developed for use on rail switches and turnouts. All of the initial goals have been met, the major one being economy of use.

The solid lubricants stay suspended in SwitchArmor™. Although stirring is advisable before applying, there will not be a solid mass of graphite at the bottom of the can. Replace the can lid after use. The remaining product may thicken, but it will not become hard if the lid is in place.

Applying SwitchArmor™ is similar to applying paint. To avoid spillage, we recommend pouring some from the original can into a second container, then apply a thin coat to the dry switch plate using a narrow brush or paint roller on a long handle. For greater convenience SwitchArmor™ in aerosol format can be applied using a special wand, available from Whitmore. Application by aerosol wand is clean and operator-friendly.

SwitchArmor™ dries quickly to form a film of graphite which is impervious to rain. The coating does not allow grit to adhere and accumulate over time. As the switch is thrown, the dry graphite film is burnished into the surface of the metal to form a smooth silver-colored contact area with low coefficient of friction.

SwitchArmor™ is economical because very little is applied, and it lasts a long time. After the film has dried, there is no further evaporation. With conventional oil or grease type lubricants there is continuous evaporation of oil. Also, the dry coating won't be removed by rain, even very heavy rain. When judging whether re-application is needed, look for a silver-colored coating in the contact area of the switch plate. If this is in place, the switch is lubricated.

BENEFITS:

- ECONOMICAL – long intervals between re-lubrication.
- RESISTS DIRT – grit and sand will not adhere.
- LESS WASTE – remaining product will not harden in sealed can.
- OPERATOR-FRIENDLY – less for the operator to carry. The aerosol format is especially easy to work with.

APPLICATIONS:

SwitchArmor™ is designed primarily for use on rail switch plates, but is also suitable for wire ropes, chains and other industrial or mining applications where a dry lubricant film is desired. It is especially useful where water contamination washes off conventional oils or greases.

ASTM #		TYPICAL CHARACTERISTICS
D-2983	Brookfield Viscosity (Finished Product) Spindle 2 @ 5 rpm @ 75°F (24°C), cps	4,500
Gardener Method	Density, lb/gal @ 60°F (15.5°C)	8.21
	Specific Gravity, g/cc @ 60°F (15.5°C)	0.986
D-92	Flash Point, °F (°C) Cleveland Open Cup (Base Oil)	175 (79)
D-1743	Rust Test	Pass after drying
	Color	Gray
	Dry-Time, minutes @ room temperature	30

The above are average values. Minor variations which do not affect product performance are to be expected in normal manufacturing.

PACKAGING

Case 4 Gallon Cans per Case	Aerosol Cans 12 – 16 oz. (354 grams) Cans
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Distributed By:



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MATERIAL SAFETY DATA SHEET

Hazardous according to criteria of Worksafe Australia.

I. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY					
Product Name:	SwitchArmor®		Manufacturer/Supplier:		
Chemical Family:	Petroleum Hydrocarbon		The Whitmore Manufacturing Company		
Use:	Aerosol Dry Film Lubricant		930 Whitmore Drive Rockwall, Texas 75087, U.S.A.		
Emergency Tel. No.:	CHEMTREC	U.S.A. & Canada	800-424-9300 (24 hrs)		
		International	703-527-3887 (Collect - 24 hr)		
		Australia	00-111-703-527-3887 (Collect - 24 hr)		
II. COMPOSITION INFORMATION ON INGREDIENTS					
Hazardous Components	CAS No.	Wt%	OSHA PEL	ACGIH TLV	Australia TWA
Butane, Propane, Isobutane	106-97-8, 74-98-6, 75-28-5	25-30	1000 ppm	1000 ppm	800 ppm
N-Butyl Alcohol	71-36-3	11-12	100 ppm	50 ppm	50 ppm
N-Butyl Acetate	126-86-4	10-11	200 ppm	150 ppm	
Petroleum Distillate	8052-41-3	18-20	500 ppm	100 ppm,	
III. ADVERSE HUMAN HEALTH EFFECTS					
Eyes:	Any eye contact will cause irritation.				
Skin:	Prolonged skin contact may cause irritation.				
Inhalation:	Prolonged breathing of vapors will cause irritation to the respiratory tract, irregular heartbeat and dizziness, weakness, fatigue, nausea, headaches, and possible unconsciousness and even asphyxiation.				
Ingestion:	Ingestion causes gastrointestinal irritation, nausea, vomiting, and diarrhea. Aspiration of material into the lungs can cause chemical pneumonia, which can be fatal.				
IV. FIRST AID MEASURES					
Eyes:	Flush with large amounts of cold water. If irritation persists, SEEK MEDICAL ATTENTION.				
Skin:	Thoroughly wash exposed area with soap and water.				
Inhalation:	Provide fresh air. If breathing difficulty persists, SEEK IMMEDIATE MEDICAL ATTENTION.				
Ingestion:	Do not induce vomiting. If irritation persists, SEEK MEDICAL ATTENTION.				
V. FIRE FIGHTING MEASURES					
Extinguishing Media:	Foam, Dry Chemical, Carbon Dioxide				
Unsuitable Extinguishing Media:	Not Determined				
Fire Fighting Protective Equipment:	Use OSHA approved self-contained breathing apparatus.				
VI. ACCIDENTAL RELEASE MEASURES					
Personal Precautions:	Wear OSHA approved self-contained breathing apparatus.				
Environmental Precautions:	Observe all local, state, and federal regulations.				
Spillage:	Absorb with dry, inert material and shovel up.				
VII. HANDLING AND STORAGE					
Handling:	Keep away from open flame or sparks. Store in metal containers until disposal.				
Storage:	Store at temperatures below 120°F.				
VIII. EXPOSURE CONTROL/PERSONAL PROTECTION					
Respiratory Protection:	Wear NIOSH/MSHA organic, filter-type respirator in confined areas or in poor ventilation.				
Hand Protection:	None				
Eye Protection:	Safety Goggles				
Body Protection:	None				

HMS SYMBOLS

Health	1
Flammability	4
Reactivity	0
PPI	C

MSDS-671

Effective Date: 6-19-12

Revised Date: 1-2-13

IX. PHYSICAL AND CHEMICAL PROPERTIES			
Physical State:	Aerosol	Color:	Black
Boiling Range/point, °F (°C):	-40 to 293 (-40 to 145)	Melting Point, °F (°C):	N/A
Flash Point (T.C.C.), °F (°C):	-142 (-97)	Autoignition Temperature, °F (°C):	760 (404)
Explosive Properties:	LEL: 1.8 UEL: 9.5	Evaporation Rate (Butyl Acetate):	<1
Partition Coefficient (Log Pow):	N/D	Vapor Pressure (psi):	75 max (of can)
Density:	7.10-7.20 lb/gal (without propellant)	Flammability:	Flammable
Oxidizing Properties:	None	Solubilities in Water:	Nil
Vapor Density:	4.0	% Volatiles:	73-75
X. STABILITY AND REACTIVITY			
Stability:	Unstable		
Conditions to Avoid:	Powerful sources of ignition and extreme temperatures.		
Materials to Avoid:	Strong oxidizing agents.		
Decomposition Products:	Oxides of carbon & hydrocarbons		
XI. TOXICOLOGICAL INFORMATION			
Acute Toxicity:	N/A	Skin Irritancy:	Causes irritation.
Chronic Toxicity:	N/A	Skin Sensitization:	N/A
Sub-acute/Subchronic Toxicity:	Not Known	Genotoxicity:	Not Known
California Prop 65:	Not Applicable	EC Classification (67/548/EEC):	R12/20/22
Carcinogenicity:	NTP: No	IARC:	2B (Carbon Black)
OSHA:	No	LD-50:	N/D
LC-50:	N/D		
XII. ECOLOGICAL INFORMATION			
Possible Effects:	In extreme cases, may generate fractions that could act as a marine pollutant. Potential unlikely.		
Behavior:	Relatively well behaved. Bioaccumulation potential nil.		
Environmental Fate:	Not thought to be toxic to marine or land organisms. Fluid is lower density than water.		
XIII. WASTE DISPOSAL			
Product Disposal:	Contact waste disposal company or local authority for advice.		
Container Disposal:	Observe all local, state, and federal regulations.		
XIV. TRANSPORT INFORMATION			
DOT:	ORM-D	UN No.:	1950
Air Transport (ICAO/IATA):	Flammable Aerosol, Class 2.1, UN 1950, ERG #122		
Sea Transport (IMO/IMDG):	Flammable Aerosol, Class 2.1, UN 1950, ERG #122		
Road and Rail Transport (ADR/RID):	Flammable Aerosol, Class 2.1, UN 1950, ERG #122		
XV. REGULATORY INFORMATION			
Labeling Information:	DOT - None All Others (Flammable Gas)	EC Annex 1 Classification:	R12/20/22
R Phrases:	R12/20/22 Extremely flammable. Harmful by inhalation and if swallowed.		
S Phrases:	S-3 Keep in a cool place; S-2 Keep away from children.		
Ozone Depleting Chemicals:	None/Nil	TSCA:	All Components are list.
WHMIS (Canada):	Label Compressed Gases, Class A, Division 2.2, UN 1002, ERG #122		
EPA Regulation 40 CFR Part 372 (SARA Section 313):	See Section II for ingredients with asterick.		
XVI. OTHER INFORMATION			
None			

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