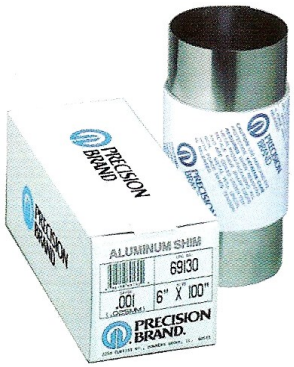

Precision Brand Aluminium Shim Stock

Accuracy Specifications:

Thickness inch	Tolerance Thickness	Tolerance Width
0.001 – 0.010	± 5%	± 0.0625”

Material and Mechanical Properties:

Material	Aluminium 1100 series (H18)
Aluminium	99.00 Min
Manganese	0.05 Max
Zinc	0.10 Max.
Copper	0.05 – 0.20 Max.
Silicon and Iron	0.95 Max
Other Elements	0.05 – 0.15
Temper	Full Hard
Brinell Hardness	44
Tensile Strength	22 KSI Min.
Elongation	1% in 2”
Meets Specifications	AISI-1100-H18 ASTM-B209

Inch Shim Rolls: 6” wide

Code	Thickness inch	Thickness mm	Box Qty	Width in	Length in	Weight kilos	Weight lbs
77-269-130	0.001"	0.025	1	6”	100”	0.08	0.18
77-269-195	0.002"	0.051	1	6”	100”	0.11	0.24
77-269-245	0.003"	0.076	1	6”	100”	0.14	0.30
77-269-280	0.004"	0.102	1	6”	100”	0.16	0.36
77-269-320	0.005"	0.127	1	6”	100”	0.21	0.47
77-269-345	0.006"	0.152	1	6”	100”	0.24	0.53
77-269-395	0.008"	0.203	1	6”	100”	0.29	0.65
77-269-450	0.010"	0.254	1	6”	100”	0.35	0.77

Packed Weight and Dimensions

Code	Thickness inch	Thickness mm	Weight kilos	W mm	H mm	L mm
77-269-130	0.001"	0.025	0.08	80	80	180
77-269-195	0.002"	0.051	0.11	80	80	180
77-269-245	0.003"	0.076	0.14	80	80	180
77-269-280	0.004"	0.102	0.16	80	80	180
77-269-320	0.005"	0.127	0.21	80	80	180
77-269-345	0.006"	0.152	0.24	80	80	180
77-269-395	0.008"	0.203	0.29	80	80	180
77-269-450	0.010"	0.254	0.35	80	80	180

Material Safety Data Sheet

PRECISION BRAND

Aluminum Metal 1XXX Series Alloy	
Common Name	
Aluminum Shim	69
Laminated Aluminum Shim & Arbors	71

Material Safety Data Sheet

Identity (Trade Name As Used On Label) and Product Code

Manufacturer Precision Brand Products Inc.	Phone Number (For Information) 630-969-7200
Address 2250 Curtiss Street Downers Grove IL 60515 USA	Emergency Phone Number Chemtrec 800-424-9300 USA & Canada 202-483-7616 International
Date Prepared 04/04/2001	Date Reviewed 07/22/2010

SECTION 1 -- MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS	LD_{50}	LC_{50}	Conc.	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)
Aluminum (Al) CAS No. 7429-90-5	Unknown	Unknown	>99.0%		
TWA Total Dust				15	10
Ceiling				None	
TWA Fume, powder, resp. dust				5	5
EU Directive: Symbol: None		R phrases: None			
*For more detailed chemical composition, refer to the certificate of analysis.					

SECTION 2 -- PHYSICAL / CHEMICAL PROPERTIES

Boiling Point	N/A	Relative Density (H_2O = 1)	2.5 - 2.9
Vapor Pressure	N/A	Melting Point	482-660 °C
Vapor Density (Air = 1)	N/A	Evaporation Rate	N/A
Solubility in Water	N/A	pH	N/A
NFPA Fire Code:	0	Partition Coefficeint – (n-ctanol/water):	N/A
Oxidizing Properties:	N/A	Odor Threshold	N/A
Appearance and Odor	Grey to silver odorless solid		

SECTION 3 -- FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used	N/A	Auto-Ignition Temperature N/A	Flammability Limits in Air % by Volume	LEL N/A	UEL N/A
Extinguisher Media	Not a fire hazard unless in particle form. Suspensions of aluminum dust in air may pose a severe explosion hazard. A potential for explosion exists for a mixture of fine and coarse particles if at least 15% to 20% of the material is finer than 44 microns (325 mesh). Buffing and polishing generate finer material than grinding, sawing, and cutting. In case of aluminum fires, use a class D dry-powder extinguisher. Do not use water or halogenated extinguishing media.				
Hazardous Combustion Products	N/A	Explosive Properties	N/A		

Precision Brand Products, Inc.
MSDS: Aluminum Shim, 69; Laminated Aluminum Shim & Arbors, 71.

SECTION 4 -- REACTIVITY HAZARD DATA

STABILITY [X] Stable [ ] Unstable	Conditions To Avoid	Molten aluminum may explode on contact with water. In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Aluminum particles on contact with copper, lead or iron oxides can react vigorously with release of heat if there is a source of ignition or intense heat. **FOR WETTED COIL OF FOIL**: In coils of aluminum foil severely immersed in water, a vigorous oxidation reaction occurs, producing hydrogen gas and heat. When the coils are removed from the cooling effect of the water, this reaction accelerates, large amounts of steam are produced, temperature rises significantly, hydrogen gas can reach concentrations over the lower explosive limit (4.1%): this can result in an explosive rupture of the coils. Rupturing of a coil may occur even when the coil is only partly immersed in water, and even if the immersion time is short.
Hazardous Decomposition Products		In the form of particles, aluminum reacts with water, strong basic solutions, strong acidic solutions, halogentated acids (e.g.: hydrofluoric acid), producing flammable hydrogen gas.

SECTION 5 -- HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE	[X] Inhalation [ ] Skin Absorption [ ] Ingestion [ ] Not Hazardous	**CARCINOGEN/MUTAGENICITY/REPRODUCTIVE TOXICITY:** None of the ingredients present at concentrations equal to or greater than 0.1% are listed as a carcinogen or potential carcinogen by the International Agency for Research on Cancer; National Toxicology Program (USA) or Occupational Safety and Health Administration (USA).
HEALTH HAZARDS	**Acute Effects** ***Inhalation:*** Solid aluminum does not present an inhalation hazard. Aluminum dusts generated during use are considered nuisance particulate. ***Skin:*** Skin contact with hot metal can cause burns. ***Eyes:*** Aluminum dust can irritate the eyes (mechanical abrasion). ***Ingestion:*** N/A	
	Chronic Effects: N/A	
Medical Conditions Generally Aggravated by Exposure	N/A	
Supplementary Information	Aluminum fumes generated during welding or melting present low health risks. Welding or plasma arc cutting of aluminum alloys can generate ozone, nitric oxides and ultraviolet radiation. Ozone overexposure may result in mucous membrane or pulmonary discomfort. UV radiation can cause skin erythema and welders flash.	

EMERGENCY FIRST AID PROCEDURES

EYE CONTACT	Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.
SKIN CONTACT	In case of burns with hot metal, rinse with plenty of cold water. If burn is severe, consult a physician.
INHALATION	In case of discomfort, remove to a ventilated area. If discomfort persists, consult a physician.
INGESTION	N/A

SECTION 6 -- CONTROL AND PROTECTIVE MEASURES

VENTILATION TO BE USED	Special ventilation should be used to covey finely divided metallic dust generated by grinding, sawing, etc., in order to eliminate explosion hazards. Maintain dust concentration in ventilation ducts below the lower explosive limit of 40 g/m□ (0.04 oz/ft□. See "National Fire Protection Association" Code 65 "Processing and Finishing of Aluminum" and Code 651 "Standard for the Manufacture of Aluminum and Magnesium Powders" and Code 77 "Static Electricity".) Use approved respirator designed for the hazard, where concentrations exceed exposure limits. The use of both primary and secondary protective equipment is necessary when handling molten metal. Refer to "Aluminum Association" guidelines. **FOR WETTED COIL OF FOIL: Do not cut, transport or even approach any coil giving off a crackling sound or emitting steam vapor**. Once a coil of foil has been partially or completely wetted, keep the coil cool until the interior is completely dry. If such cooling is impractical, place the coil away from people and other product for 72 hours. DO NOT IMMERSE A COIL OF ALUMINUM FOIL IN WATER.

Material Safety Data Sheet

Precision Brand Products, Inc.
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SECTION 7—WASTE DISPOSAL, HANDLING & STORAGE

Waste Disposal Methods	Recycle, if possible. Dispose of waste in accordance with federal, state, or local regulations.
Precautions to be Taken in Handling and Storage	Because of the risk of explosion, aluminum ingots and metal scrap should be thoroughly dried prior to remelting. Use standard techniques to check metal temperature before handling. Hot aluminum does not present any warning color change. Exercise great caution, since the metal may be hot. For more information on the handling and storage of aluminum, consult "Guidelines for Handling Molten Aluminum" and "Recommendations for Storage and Handling of Aluminum Powders and Paste" and "Guidelines for Handling Aluminum Fines Generated During Various Aluminum Fabricating Operations" published by Aluminum Association, 900 Nineteenth St. NW, Washington DC 20006.
Storage Conditions	N/A

SECTION 8 – ECOLOGICAL INFORMATION

Aluminum and its alloys under solid form, such as ingots or manufactured items, do not present any hazard for environment because metals are not biologically available. Aluminum can be recycled.

SECTION 9 – TRANSPORT INFORMATION

Not regulated under any of the following: Transport of Dangerous Goods Regulations (Canada), CFR 49 Code of Federal Regulations (USA), International Maritime Organization, International Civil Aviation Organization, and International Air Transport Association.

SECTION 10 – REGULATORY INFORMATION

WHMIS CLASSIFICATION (Canada)	Not controlled.
EU CLASSIFICATION (European Union):	
Warning Symbol	N/A
Warning Word:	N/A
Risk Phrases:	N/A
Safety Phrases:	N/A
USA REGULATIONS:	This product contains trace amounts of lead (Pb) (<0.1%). Any process resulting in exposure to more than 0.5 mg/m□ of metal dust per day may result in a daily dose of lead of over 0.5 ug/day, the dose above which the "California Safe Drinking Water Toxic Enforcement Act" of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines. The dose is not considered dangerous for health according to current toxicology studies.
SECTION 313 SUPPLIER NOTIFICATION:	This product contains no chemicals in concentrations subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372.

NOTE: The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, Precision Brand Products, Inc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular period. Accordingly, Precision Brand Products, Inc. will not be responsible for damages of any kind resulting from the use of or reliance upon such information. NO REPRESENTATIONS, OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER TO WHICH THE INFORMATION REFERS. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.