AIRTECH
ADVANCED MATERIALS GROUP

MATERIAL SAFETY DATA SHEET

Permagrip Strips – Issue Date: April 11, 2005

SECTION I – PRODUCT AND COMPANY IDENTIFICATION

Trade Name: **Permagrip Strips**
Product Description:
Supplier: **Airtech International, Inc.**
5700 Skylab Road
Huntington Beach, CA 92647
Telephone: 714-899-8100
Fax: 714-899-8179

Emergency Telephone: **800-424-9300**

CERCLA Ratings: Health = Fire = Reactivity = Persistence=
(scale 0-3)
NFPA Ratings: Health= Fire= Reactivity=
(scale 0-4)

SECTION II – HAZARDOUS INGREDIENTS

Aluminum, Al
CAS #: 7429-90-5 % Composition by Wt.: 80.0-99.7
ACGIH TWA (mg/m) 10.0 as metal dust and oxide
5.0 as welding fume
OSHA 1910.1000 TWA (mg/m) 15.0 as total dust
5.0 as respirable fraction
WISHA PEL (mg/m) 10.0 as metal dust and oxide
5.0 as welding fume

Other Contaminates:

Cobalt, Co
CAS #: 7440-48-4 Maximum % Composition by Wt.: 0.1-1.0
P 1.0-10.0 W
ACGIH TWA (mg/m) 0.05 as fume and dust
OSHA 1910.1000 TWA (mg/m) 0.05 as fume and dust
WISHA PEL (mg/m) 0.05 as fume and dust

Copper, Cu
CAS #: 7440-50-8 Maximum % Composition by Wt.: 1.0-
10.0 W 10.0-20.0 P
ACGIH TWA (mg/m) 0.2 as fume 1.0 as dust
OSHA 1910.1000 TWA (mg/m) 0.1 as fume 1.0 as dust
WISHA PEL (mg/m) 0.1 as fume 1.0 as dust

Iron, fe
CAS #: 1309-37-1 Maximum % Composition by Wt.: 1.0-
10.0 W,P
ACGIH TWA (mg/m) 5.0 as oxide fume
OSHA 1910.1000 TWA (mg/m) 10.0 as oxide dust and fume
WISHA PEL (mg/m) 5.0 as oxide dust and fume

Magnesium, Mg
CAS #: 1309-48-4 Maximum % Composition by Wt.: 1.0-
10.0 W 10.0-20.0 P
ACGIH TWA (mg/m) 10.0 as oxide fume
OSHA 1910.1000 TWA (mg/m) 10.0 as total dust oxide fume
5.0 as respirable fraction oxide fume
WISHA PEL (mg/m) 10.0 as total dust oxide fume
5.0 as respirable oxide fume

Manganese, Mn
CAS #: 7439-96-5 Maximum % Composition by Wt.: 1.0-
10.0 W
ACGIH TWA (mg/m) 1.0 as fume 3.0 STEL as fume 5.0 as dust
OSHA 1910.1000 TWA
(mg/m) 1.0 as fume
WISHA PEL (mg/m) 5.0 ceiling

Silicon, Si
CAS #: 7440-21-3 Maximum % Composition by Wt.: 10.0-
20.0 W,P
ACGIH TWA (mg/m) 10.0 as total dust
OSHA 1910.1000 TWA (mg/m) 10.0 as total dust
5.0 as respirable fraction
WISHA PEL (mg/m) 10.0 as total dust
5.0 as respirable fraction

Silver, Ag
CAS #: 7440-22-4 Maximum % Composition by Wt.: 0.1-1.0
P
ACGIH TWA (mg/m) 0.1 as metal
OSHA 1910.1000 TWA (mg/m) 0.01 as metal dust and fume
WISHA PEL (mg/m) 0.01 as metal

Tin, Sn
CAS #: 7440-31-5 Maximum % Composition by Wt.: 1.0-
10.0 P
ACGIH TWA (mg/m) 2.0 as oxide and metal
OSHA 1910.1000 TWA (mg/m) 2.0 as oxide
WISHA PEL (mg/m) 2.0 as oxide fume

Zinc, Zn

CAS #: 1314-13-2	Maximum % Composition by Wt.: 1.0-10.0 W,P
ACGIH TWA (mg/m)	5.0 as oxide fume 10.0 STEL as oxide fume 10.0 as total dust
OSHA 1910.1000 TWA (mg/m)	5.0 as oxide fume 10.0 as zinc oxide total dust 5.0 as zinc oxide respirable fraction
WISHA PEL (mg/m)	5.0 as oxide fume 10.0 STEL as oxide fume

Key: W = Wrought aluminum (fabricated products)
P = Prime and ingot hardener aluminum
STEL = Short Term Exposure Limit
TWA = Time Weighted Average
PEL = Permissible Exposure Limit

SECTION III – PHYSICAL DATA

Description:	Material is solid; metallic appearance, no odor.
Melting point:	950-1215°F
Boiling point:	N/A
Specific gravity (H 0=1)	2.5-2.9
PH:	N/A
Solubility in water:	Nil
Vapor pressure:	N/A

SECTION IV – FIRE AND EXPLOSION DATA

Flash Point:	N/A
Auto Ignition Temperature:	N/A
Flammable Limits:	N/A

Extinguishing Media:
Dry powder or sand
DO NOT USE WATER OR HALOGEN ON DUST FIRES
Unusual Fire and Explosion Hazards: Damp aluminum dust may spontaneously heat with liberation of hydrogen to form explosive air mixtures.

1. Acids and bases in contact with aluminum may generate explosive mixtures with hydrogen.
2. Finely divided aluminum will form explosive mixtures in air. It will also form explosive mixtures in air in the presence of bromates, iodates or ammonium nitrate.
3. When remelting aluminum scrap, entrapped moisture or the presence of strong oxidizers such as ammonium nitrate could cause an explosion. This applies to the collection of moisture in sow cavities as well. Moisture must be driven off prior to remelting.
4. Do not touch cast aluminum metal or heated aluminum product without knowing metal temperature. Aluminum experiences no color change during heating. If metal is hot and touched, burns can result.
5. Aluminum powder must be packaged and shipped as a Flammable Solid UN1396.
6. Hard alloy ingots in the 2000 and 7000 series must be stress-relieved to prevent explosion (or violent cracking) when sawed.
7. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infra-red radiation and ultra-violet radiation, in addition to metal fume.
8. Some aluminum scrap may be contaminated with oil at levels greater than 1%. Melting of aluminum scrap may generate oil vapors which are irritating to the eyes and upper respiratory tract. Prolonged or repeated skin contact with oil may cause skin irritation.
9. Vapor degreaser must be properly maintained to limit the accumulation of aluminum fines. The accumulation of aluminum fines could result in a potential degreaser fire or explosion.
10. Nickel, Chromium, Lead, Beryllium and Cadmium, listed on California's Proposition 65 list of "Chemicals Known to the State to Cause Cancer or Reproductive Harm." may exist in this product at the following maximum concentrations by weight-Nickel (0.05%), Chromium (0.09%), Lead (0.05%, Beryllium (0.05%) and Cadmium (0.05%).

SECTION V – HEALTH HAZARD DATA

Inhalation:
Not likely unless material machined, welded or remelted. Exposure to zinc oxide fume can result in "zinc chills" (metal fume fever). The temporary symptoms can include fever, chills, nausea, vomiting and muscular pain. Recovery is usually complete in 24 to 48 hours. Overexposure to copper fume can cause upper respiratory tract irritation.

Ingestion:	Not likely
Skin:	Not likely
Eyes:	May irritate eyes when welding or plasma cutting.

Personal Protective Equipment
Appropriate personal protective equipment is required when melting, casting, machining, forging, or otherwise processing. The nature of the processing activity will determine what form of equipment is necessary, i.e. glasses, respirator, protective clothing and ear protection.

Emergency Medical Procedures:
In case of inhalation
Remove from exposure. Get medical attention, if experiencing breathing difficulties.
In case of skin contact
Remove particles by thoroughly washing with soap and water.
In case of eye contact:
Flush with water for at least 15 minutes. Get medical attention if irritation persists.

SECTION VI – REACTIVITY DATA

Stability	Stable
Incompatibilities	Anhydrous bromine
Conditions to Avoid	See Fire & Explosion Section
Hazardous Decomposition Products	See Fire & Explosion Section

SECTION VII – SPILL OR LEAK PROCEDURE

N/A

Waste Disposal Methods
Used or unused product should be tested to determine hazard status and disposal requirements under federal, state and local laws and regulations.
SARA Section 313 Notification: If present, chemicals subject to the reporting requirements of SARA Title III, Section 313 are identified in Section II Hazardous Ingredients.
Proposition 65 Warning Statement: This product may contain in trace amounts a chemical or chemicals known to the State of California to cause cancer or reproductive toxicity.

USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

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