

SILPAK, INC.

P.O. BOX 2830 168 ATLANTIC ST. POMONA CA 91769-2830
(909) 595-6191 FAX (909) 598-2446 WWW.SILPAK.COM

MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER: SILPAK, INC.
ADDRESS: 168 ATLANTIC STREET, POMONA, CA 91768
EMERGENCY TELEPHONE #: 909-595-6191
CHEMICAL NAME AND SYNONYMS: BRONZE POWDER (AL-300 ALUMINUM DUST)
TRADE NAME AND SYNONYMS: BPM 116

SECTION II HAZARDOUS INGREDIENTS

COMPONENT	CAS#	% BY WT. (1)	TLV/TWA	PEL	STEL
COPPER (*)	7440-50-8	0-70	1	1	2
ZINC (*)	7440-66-6	0-17	5	N.E.	N.E.
ALUMINUM (*)	7429-90-5	0-85	10	15	5
CARBON BLACK	1333-86-4	5-15	3.5	N.E.	N.E.
STEARIC ACID	57-11-4	5-2	N.E.	N.E.	N.E.

* THE PRODUCTS LISTED IN SECTION I CONTAIN THESE CHEMICALS WHICH ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (SARA TITLE III) AND 40 CFR 372.

COPPER, ZINC AND ALUMINUM ALSO APPEAR ON THE TSCA INVENTORY LIST AND HAVE BEEN ASSIGNED NUMBERS A546-0888, B823-4379 AND A072-7839 RESPECTIVELY.

(1) WEIGHT RANGES HAVE BEEN EXPRESSED IN BROAD RANGES FOR PROPRIETARY PURPOSES.

SECTION III PHYSICAL DATA

BOILING POINT (F): COPPER 4,653F; ZINC 1,665F; ALUMINUM 4766F; CARBON BLACK 8720F
SPECIFIC GRAVITY: COPPER 8.92; ZINC 7.14; ALUMINUM 2.7; CARBON BLACK 1.8
VAPOR PRESSURE (mm Hg): N/A
PERCENT VOLATILE BY VOLUME (%): NONE
VAPOR DENSITY (AIR=1): N/A
EVAPORATION RATE (nBuAc=1): N/A
APPEARANCE AND ODOR: METALLIC LOOKING POWDER WITH LITTLE ODOR.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): N/A
FLAMMABLE LIMITS: Lel -N.E., Uel -N.E.
D.O.T. FLAMMABILITY CLASSIFICATION: METAL POWDERS, FLAMMABLE N.O.S. (CONTAINS COPPER AND OR ZINC), UN3089, CLASS 4.1 PG II. FOR ITEMS 20,21,25,28,69,70,83,106,244,661,805,2775,V-798-22,V-798-23,V-798-27, V-798-30,V-798-33,V-798-34. ALUMINUM POWDER, COATED, UN 1309, CLASS 4.1, PG II FOR ITEMS 81,115,803,852,866,867,871.

EXTINGUISHING MEDIA: NFPA CLASS D DRY CHEMICAL EQUIPPED WITH A LOW VELOCITY NOZZLE, SAND OR ANOTHER INERT MATERIAL MAY BE USED TO SMOTHER BURNING PIGMENT. WATER MAY BE USED TO COOL CLOSED CONTAINERS IF EXPOSED TO EXTREME HEAT. NEVER EMPLOY WATER AS AN EXTINGUISHING AGENT FOR ITEMS CLASSED AS UN1309 (SEE ABOVE). WATER AND ALUMINUM, WHEN COMBINED, FORM HYDROGEN GAS WHICH CAN RAPIDLY SPREAD THE FIRE. DO NOT USE HIGH VELOCITY EXTINGUISHING AGENTS ON ITEMS CLASSED AS UN1309 SINCE THEY MAY DISTURB THE BURNING POWDER TO CREATE A POTENTIALLY EXPLOSIVE DUST CLOUD. SAND OR ANOTHER INERT MATERIAL SHOULD BE USED TO RING OR DIKE FIRE WHILE ALLOWING THE CONTENTS TO EXTINGUISH ITSELF.

SPECIAL FIRE FIGHTING PROCEDURES: DO NOT USE FIRE EXTINGUISHERS CONTAINING HALOGENATED HYDROCARBONS TO EXTINGUISH BURNING MATERIAL. SINCE THIS POWDER CONTAINS ZINC, IT MAY REACT WITH THESE AGENTS TO LIBERATE HYDROGEN GAS, WHICH CAN SPREAD THE FIRE. ALSO, BURNING BRASS POWDER MAY REACT VIOLENTLY WITH THESE TYPES OF EXTINGUISHING AGENTS. FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: ALUMINUM POWDER IN BULK FORM IS STABLE, BUT WHEN SUSPENDED AS AIRBORNE PARTICULATE, CAN BE POTENTIALLY EXPLOSIVE. USE EXTREME CARE WHEN HANDLING PRODUCTS CLASSIFIED AS UN1309. (SEE ABOVE.)

SECTION V HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: SKIN & EYE CONTACT AND BREATHING OF AIRBORNE PARTICULATE.

HEALTH RISKS: EYES & SKIN: COPPER & COPPER/ZINC ALLOY DUSTS ARE EYE AND MUCOUS MEMBRANE IRRITANTS AND SKIN SENSITIZERS. ACUTE EXPOSURE MAY CAUSE REDNESS OF THE EYES AND DERMATITIS.

INHALATION: PROLONGED EXPOSURE TO AIRBORNE PARTICULATE MAY CAUSE ACUTE IRRITATION OF THE NOSE AND TRACHEA RESULTING IN A METALLIC TASTE OR NASAL ULCERATION. IF EXPOSED TO EXTREMELY HIGH TEMPERATURES, ZINC METAL FUMES CAN RESULT IN SYMPTOMS KNOWN AS "METAL FUME FEVER".

INGESTION: INGESTION OF COPPER COMPOUNDS MAY CAUSE VOMITING AND COLLAPSE. ACUTE POISONING IS CHARACTERIZED BY HEMOLYSIS, JAUNDICE, ANURIA, HYPOTENSION AND CONVULSIONS.

EMERGENCY AND FIRST AID PROCEDURES:

SKIN: REMOVE CONTAMINATED CLOTHING AND WASH AFFECTED AREA WITH SOAP AND WARM WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

EYES: FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. AVOID WEARING OF CONTACT LENSES.

INGESTION: IF SWALLOWED, DRINK ONE OR TWO GLASSES OF WATER. DO NOT INDUCE VOMITING. SEEK MEDICAL ATTENTION IMMEDIATELY.

INHALATION: IF BREATHING BECOMES DIFFICULT, LEAVE AREA IMMEDIATELY AND MOVE TO AN AREA OF FRESH AIR. IF BREATHING HAS STOPPED, BEGIN ARTIFICIAL RESPIRATION PROCEDURES AT ONCE. SEEK MEDICAL ATTENTION.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: PERSONS WITH PRE-EXISTING CHRONIC RESPIRATORY PROBLEMS AND/OR IMPAIRED PULMONARY FUNCTION, COULD SUFFER INCREASED DISCOMFORT. ADDITIONALLY, PERSONS WITH OBSTRUCTIVE AIRWAY DISEASES, PRE-EXISTING KIDNEY, LIVER, SKIN OR BLOOD DISORDERS, OR THOSE HAVING BEEN DIAGNOSED WITH WILSON'S DISEASE, MAY FIND THEIR CONDITION FURTHER AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

CARCINOGENIC STATUS: NOT LISTED BY NTP, IARC, OR OSHA.

SECTION VI REACTIVITY DATA

STABILITY: PRODUCT IS STABLE IN BULK FORM. AS PREVIOUSLY MENTIONED, AIRBORNE PARTICULATE (DUST) CAN BE POTENTIALLY EXPLOSIVE. USE EXTREME CAUTION WHEN HANDLING THIS PRODUCT TO AVOID GENERATING DUST PARTICULATE. ALUMINUM WILL REACT WITH WATER TO SLOWLY GENERATE HYDROGEN GAS AND HEAT. THIS REACTION CAN BE HAZARDOUS WHEN ATTEMPTING TO STORE MIXED PRODUCT IN A SEALED CONTAINER AS A RESULT OF PRESSURE BUILD-UP. DO NOT ATTEMPT TO STORE FINISHED MIXTURES OF WATER-BASED MEDIUMS AND THOSE PIGMENTS REFERENCED IN SECTION I.

CONDITIONS TO AVOID: SEE ABOVE

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ALKALIES, CHLORATES, BROMATES, MINERAL ACIDS, STRONG OXIDIZING AGENTS, SILVER CHLORIDE, IODATES, CHLORINATED HYDROCARBONS, NITRITES, NITRATES, CARBON D SULFIDE, SODIUM PEROXIDE PLUS CARBON DIOXIDE, SULFUR DICHLORIDES, PALLADIUM, MANGANESE, MAGNESIUM PLUS POTASSIUM CHLORATE, SODIUM CARBONATE, SULFATES, DIBORANE.

HAZARDOUS DECOMPOSITION PRODUCTS: DECOMPOSITION MAY YIELD HYDROGEN AND NOXIOUS COPPER COMPOUNDS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VII

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **SMALL:** SMALL SPILLS MAY BE SWEEPED GENTLY INTO A HAZARDOUS WASTE CONTAINER. AVOID GENERATING DUST CLOUDS. USE NON-SPARKING TOOLS. **LARGE SPILLS:** LARGE SPILLS SHOULD BE HANDLED IN A SIMILAR MANNER. AVOID RUN-OFF INTO SEWERS, DRAINS OR OTHER OPEN BODIES OF WATER. NOTIFY AUTHORITIES IF THIS HAS OCCURRED.

WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): WEAR AN APPROPRIATE (NIOSH APPROVED) RESPIRATOR DURING APPLICATION IF AIR MONITORING DEMONSTRATES THAT AIRBORNE PARTICULATE EXCEEDS RECOMMENDED THRESHOLD LIMITS.

VENTILATION: VENTILATION SUFFICIENT IN VOLUME AND PATTERN SHOULD BE PROVIDED TO KEEP AIR QUALITY WITHIN APPROVED OSHA LEVELS.

PROTECTIVE GLOVES: YES

EYE PROTECTION: SPLASH GOGGLES

OTHER PROTECTIVE EQUIPMENT: EYE WASH AND SAFETY SHOWER ARE RECOMMENDED IF USING THIS PRODUCT IN LARGE CONCENTRATIONS. ALWAYS WASH HANDS THOROUGHLY WHEN FINISHED USING THIS PRODUCT.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: STORE PRODUCT IN AN AREA AWAY FROM EXTREME TEMPERATURE CONDITIONS. KEEP CONTAINERS CLOSED AFTER USE. KEEP DRY

OTHER PRECAUTIONS: KEEP AWAY FROM CHILDREN

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EMERGENCY TELEPHONE #: 909-595-6191

CHEMICAL NAME AND SYNONYMS: CB-21

TRADE NAME AND SYNONYMS: BRONZE POWDER MIXTURE

HMS RATING : HEALTH - 1, FLAMMABILITY - 0, REACTIVITY - 0, PERSONAL PROTECTION - E

SARA 313 : LISTED (COPPER)

SECTION II HAZARDOUS INGREDIENTS

INGREDIENT	CAS#	PERCENTAGE
COPPER	7440-50-8	50-90%
TIN	7440-31-5	10-50%

SECTION III PHYSICAL DATA

BOILING POINT (F): 4100 F

SPECIFIC GRAVITY: 8.10

VAPOR PRESSURE (mm Hg): 1 MM hg @ 20C

PERCENT VOLATILE BY VOLUME (%) - 0

VAPOR DENSITY (AIR=1): N/A

EVAPORATION RATE (nBuAc=1): N/A

SOLUBILITY IN WATER: INSOLUBLE

APPEARANCE AND ODOR: ODORLESS, REDDISH TO GOLD COLOR POWDER

SECTION VI HEALTH HAZARD INFORMATION

EYE CONTACT : Immediately wash eyes with large amounts of water and seek medical attention.

SKIN CONTACT : Flush area with water and seek attention if irritation persist.

INHALATION : Move person to fresh air. If breathing stops clear air passage and perform Artificial respiration, seek medical attention immediately.

INGESTION : Dilute with water or milk. Remove any gastric lavage(stomach tube) unless Patient vomits. Seek medical attention.

SECTION V FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): N/A

FLAMMABLE LIMITS: Lel - 0.19 oz/ft(3)

EXTINGUISHING MEDIA: FCAM, CO2, DRY CHEMICAL, OR WATER FOG

SPECIAL FIRE FIGHTING PROCEDURES: USE SELF-CONTAINED BREATHING APPARATUS IN PRESSURE DEMAND MODE. DECOMPOSITION MAY YIELD HYDROGEN AND NOXIOUS COPPER COMPOUNDS.

SECTION VI REACTIVITY DATA

STABILITY: STABLE

CHEMICAL INCOMPATIBILITIES : STRONG ALKALIES, CHLORATES, BROMATES, TURPENTINE, MINERAL ACIDS, AND AMINES

SPECIAL HANDLING/ STORAGE - N/A

PREPARED BY: PHILIP J. GALARNEAU 1-2-2002