

MATERIAL SAFETY DATA SHEET

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SECTION 1 -- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME...: ALUMINUM PASTE

PRODUCT CLASS: SCREEN PRINTING RELATED MATERIAL

INK SERIES...: DIST

CODE: ALUMPASTE

- H M I S C O D E S -
HEALTH - 2*
FLAMMABILITY - 2
REACTIVITY - 1
PPE - X

Item Description	WT lb/gal	VOC g/L	VOC lb/gal	% VOC volume	Item Description	WT lb/gal	VOC g/L	VOC lb/gal	% VOC volume
SIPM504	13.3	480	4.0	50	SIPM533	12.4	447	3.7	47
NSIPM534	10.0	360	3.0	38	NSIPM557	13.3	480	4.0	50
SIPM571	13.2	474	4.0	49	NSIPM572	12.2	527	4.4	55

SECTION 2 -- COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL NAME; COMMON NAME; CAS NUMBER	PERCENT BY WEIGHT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE IN mmHg	NOTES
		-----ACGIH----- TLV	-----OSHA----- PEL		
* ALUMINUM COMPOUNDS; CAS #: 7429-90-5	60-80	10 mg/m3	15 mg/m3 Total Dusts	N/A	(1)
PETROLEUM DISTILLATE; ALIPHATIC HYDROCARBON; CAS #: 8052-41-3	10-40	100 ppm	100 ppm	2.0 @ 20C	(2)
PETROLEUM DISTILLATE; AROMATIC HYDROCARBON; CAS #: 64742-95-6	0-20	NOT ESTABLISHED	NOT ESTABLISHED	3.0 @ 20C	
* 1,2,4-TRIMETHYLBENZENE; PSEUDOCUMENE; CAS #: 95-63-6	0-8	25 ppm	25 ppm	<1 @ 20C	(3)
* XYLENE; DIMETHYLBENZENE; CAS #: 1330-20-7	0-3	100 ppm STEL: 150 ppm	100 ppm STEL: 150 ppm	6.6 @ 20C	(4)
* ETHYL BENZENE; CAS #: 100-41-4	0-1	100 ppm STEL: 125 ppm	100 ppm STEL: 125 ppm	7.1 @ 20C	(5)

* SUBJECT TO REPORTING REQUIREMENT OF SECTION 313 OF TITLE III OF SARA (40 CFR PART 372).

- 1) CAS # and exposure limits are for total aluminum dust. 5 mg/m3 exposure limit for respirable fraction.
- 2) Exposure limits are for Stoddard Solvent CAS# 8052-41-3.
- 3) The above ACGIH exposure limit is for Trimethylbenzene isomers CAS# 25551-13-7.
- 4) This chemical is included on the list of Hazardous Air Pollutants (HAPs) from Title III of the Clean Air Act Amendments of 1990.
- 5) This chemical is included on the list of Hazardous Air Pollutants (HAPs) from Title III of the Clean Air Act Amendments of 1990.

SECTION 3 -- HAZARDS IDENTIFICATION

GENERAL HEALTH EFFECTS

THE FOLLOWING INFORMATION HAS BEEN DEVELOPED BASED UPON USING THE PRODUCT AS INTENDED BY THE MANUFACTURER. The potential health effects of this product are based on the hazards of its components. The use of this product in combination with other products may produce synergistic (additive) health effects. Cautionary labeling and material safety data sheets of all materials used with this product should be reviewed before use.

EYES

Eye contact with liquid, vapors or mists may cause irritation, including burning, tearing, redness or swelling.

SKIN

Repeated or prolonged overexposure may cause skin irritation or dermatitis. Symptoms may include dryness, chapping and redness. This material may be absorbed through the skin. Skin absorption is possible but harmful effects are not expected from this route of exposure under normal conditions of handling and use.

INHALATION

Repeated and prolonged overexposure by inhalation may cause respiratory tract irritation. Symptoms may include central nervous system disorders such as headaches, dizziness, weakness and fatigue.

INGESTION

Ingestion may cause gastrointestinal tract irritation. Symptoms may include abdominal pain, nausea, vomiting and diarrhea. Ingestion may cause vomiting. Aspiration of material into lungs may cause chemical pneumonitis which can be fatal.

CHRONIC EFFECTS/TARGET ORGANS

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Ethylbenzene is possibly carcinogenic to humans (IARC Group 2B).

ANIMAL STUDIES

Xylene causes harm to the fetus in lab animal studies. The relevance of these findings to humans is uncertain. Repeated and prolonged overexposure to high concentrations of xylene has been suggested to cause the following effects in laboratory animals; hearing loss, mild reversible liver effects, kidney, lung, heart, spleen and nervous system effects. For animal studies, reference TSCA Section 4 Test Rule Results or contact the manufacturer for further details.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Pregnant women and persons with pre-existing health disorders should consult their physician before using this product. Repeated and prolonged overexposure and/or individual sensitivity may increase the potential for and degree of adverse health effects. See Section 3 "Hazards Identification" for effects of certain hazardous ingredients.

ROUTES OF EXPOSURE

Primary exposure routes: Inhalation-Dermal (Contact/Absorption)-Ingestion

SECTION 4 -- FIRST AID MEASURES

EYES

After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If irritation persists have eyes examined and tested by medical personnel.

SKIN

In case of contact, immediately wash skin with a mild soap and plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Cool water is initially suggested to prevent the pores of the skin from opening. This will minimize both the area and time of skin contact. Lukewarm water may then be used to ensure all contaminants are removed. Skin should be monitored for reddening or chemical burns. Mild soap is suggested to help prevent abrading the skin or rubbing the chemicals into pores during cleansing. Get medical attention if irritation persists or significant contact has occurred. Thoroughly wash (or discard) clothing and shoes before reuse.

INHALATION

Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention if breathing difficulty is experienced.

INGESTION

If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

OTHER COMMENTS

No Data Available

SECTION 5 -- FIRE FIGHTING MEASURES

FLASH POINT

100 Degrees Fahrenheit (SETA Flash)

OSHA FLAMMABILITY CLASSIFICATION (NFPA)

Class II Combustible Liquid

LEL - LOWER EXPLOSIVE LIMIT / UEL - UPPER EXPLOSIVE LIMIT

0.9% volume in air / No Data Available

EXTINGUISHING MEDIA

Use Class B extinguisher, inert granular material like dry sand, Class D extinguisher with low velocity nozzle, Class D extinguishing agent, regular protein or AFFF. DO NOT use a water hose stream. DO NOT use halogenated extinguishing agents like halon or Carbon Tetrachloride.

FIRE AND EXPLOSION HAZARDS

Isolate from heat, electrical equipment, sparks, and open flame. Keep containers tightly closed. Vapors may be heavier than air and can travel to a source of ignition then flash back. Closed containers may explode when exposed to extreme heat.

FIRE FIGHTING EQUIPMENT

Full protective equipment including self-contained breathing apparatus (SCBA) is recommended to protect firefighters.

SPECIAL FIRE FIGHTING PROCEDURES

When fighting a fire involving aluminum paste. DO NOT USE A WATER HOSE STREAM. DO NOT USE HALOGENATED EXTINGUISHING AGENTS. Aluminum particles suspended in air may form an explosive mixture: avoid any disturbance which could cause a dust cloud, such as directing water streams or gas propelled fire extinguishers into the burning material. Direct the Class B extinguishing agent above the fire to rain down on the burning material. Care should be used when applying a Class B extinguishing agent because some agents can accelerate a fire where most of the solvent in the paste has been consumed and the aluminum flake has started to burn. If the extinguishing agent is carefully applied, it will be very evident if it accelerates the fire. If it does, or if the fire at some point has the appearance of metal burning with a bright, whitish glow, do not attempt to extinguish it. Isolate the fire by ringing it with dry, inert granular material, or Class D extinguishing agent then leave it alone. Allow the material to become cold prior to disposal because if the metal has ignited, it may continue to burn under a crust without flames.

SECTION 6 -- ACCIDENTAL RELEASE MEASURES

RELEASE MANAGEMENT MEASURES

Remove all sources of ignition (flames, hot surfaces and electrical, static or frictional sparks). Gently sprinkle the area with an inert floor sweeping compound, and using a natural hair bristle broom, gently sweep the material and transfer to a moisture proof, waste disposal container using a long-handled shovel made of nonsparking material. Seal the container for disposal.

SECTION 7 -- HANDLING AND STORAGE

HANDLING AND STORAGE METHODS

Use in a well ventilated area. Follow all MSDS/label precautions even after container is emptied; container may retain product residues. Store in closed containers in cool, dry, well ventilated area away from sources of ignition. Avoid any contact with water vapor. Do not store near oxidizers, acids, alkalis, water, halogenated hydrocarbons or combustible materials. Keep container closed when not in use. Avoid spillage and/or the creation of an aluminum dust cloud. Transfer aluminum with non-sparking tools only, and insure that all equipment is electrically grounded. Smoke in designated areas only. Avoid prolonged or repeated overexposure to this product. Keep out of reach of children. Follow label directions carefully. Do not take internally. Harmful or fatal if swallowed.

SECTION 8 -- EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION

If concentrations of hazardous ingredients exceed exposure limits listed in Section 2 an appropriate NIOSH (National Institute for Occupational Safety and Health) approved respirator with an organic vapor cartridge should be used. If material is handled under mist, spray or dust forming conditions, a P100 (99.97% efficiency) filter should be used in addition to the organic vapor cartridge. Protection provided by air-purifying respirators is limited. If no exposure limits are listed in Section 2, follow general safety guidelines in 29 CFR 1910.134 Respiratory Protection or other applicable respiratory standard.

SKIN PROTECTION

Use neoprene, nitrile or other gloves resistant to chemicals listed in Section 2. Contact a reputable safety supply company for appropriate gloves.

EYE PROTECTION

Use ANSI (American National Standards Institute) approved safety glasses, faceshield or splash proof goggles to prevent eye contact. Contact a reputable safety supply company for appropriate eye protection. The availability of an eye wash is highly recommended.

EXPOSURE GUIDELINES

See Section 2 "Composition, Information on Ingredients" for occupational exposure limits. Excessive concentrations of nuisance dusts or particulates not otherwise classified (PNOC) or regulated (PNOR) may reduce visibility and cause unpleasant deposits in the eyes, ears, and nasal passages. The TLV and PEL has been established for all non-toxic "nuisance dusts" that are not otherwise classified and refers to both organic and inorganic dusts. Exposure or generation of these dusts is not anticipated during normal printing operations. The use of dry pigments and powders, grinding or sanding of printed products may generate quantities of these particulates. Refer to Section 2 Composition, Information on Ingredients for exposure limits.

HYGIENIC PRACTICES

Wash with soap and water before eating, smoking or using toilet facilities. Separately wash or discard clothing and footwear before reuse. NEVER try to remove product from the skin by using solvent or thinner. Such action is likely to increase the possibility of undesirable effects. Remove contaminated clothing to prevent prolonged skin contact.

ENGINEERING CONTROLS

Use applicable engineering controls, work practices and personal protective equipment to ensure all concentrations are kept below the exposure limits listed in Section 2. Adequate controls should be implemented to ensure employee safety from fine mists which may be produced under some printing conditions.

OTHER PROTECTION

No Data Available

SECTION 9 -- PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE:

Silver colored paste

ODOR:

Aromatic Hydrocarbon

PHYSICAL STATE:

Semisolid

pH

Not applicable

VAPOR PRESSURE

See Section 2 for individual ingredients.

VAPOR DENSITY

Heavier than air

BOILING POINT

No data available

FREEZING POINT

No data available

SOLUBILITY IN WATER

No data available

EVAPORATION RATE

Slower than ether

PERCENT VOLATILE BY VOLUME: SEE SECTION ONE

WEIGHT PER GALLON: SEE SECTION ONE

VOC: SEE SECTION ONE

PHOTOCHEMICALLY REACTIVE

Yes

SECTION 10 -- STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable

CONDITIONS TO AVOID

Avoid excessive heat, ignition sources, sparks and open flame.

INCOMPATIBILITY WITH OTHER MATERIALS

Avoid any contact with oxidizing agents, acids, alkalis, water and halogenated hydrocarbons.

HAZARDOUS DECOMPOSITION PRODUCTS

Aluminum reacts with strong oxidizing agents, acids, alkalis and water to liberate hydrogen gas. When aluminum burns, aluminum oxide is formed.

HAZARDOUS POLYMERIZATION

Not anticipated during normal printing and storage conditions.

SECTION 11 -- TOXICOLOGICAL INFORMATION

EXPERIMENTAL TOXICITY DATA

Refer to Section 3 Hazards Identification for additional toxicological data. Experimental toxicity data on petroleum distillate CAS# 8052-41-3 has given the following results: Oral LD50 Rat; >5g/kg. Experimental toxicity data on petroleum distillate CAS# 64742-95-6 has given the following results: Oral LD50 Rat; 4700 mg/kg; Dermal LD50 Rabbit 4 ml/kg; Inhalation LC50 Rat; 3670 ppm 4 hours. Experimental toxicity data on xylene has given the following results: Oral LD50 Rat; 4300 mg/kg; Inhalation LC50 Rat; 6700 ppm.

SECTION 12 -- ECOLOGICAL INFORMATION

ECOTOXICITY

Because this product may be a mixture of chemicals, some of which may be ecologically toxic, it is strongly suggested that it not be disposed of into the environment, i.e. soil, water courses, lakes, landfills, sewers, etc.

ENVIRONMENTAL FATE

No Data Available

SECTION 13 -- DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

This product is considered hazardous for disposal purposes by the U.S. Environmental Protection Agency Resource Conservation and Recovery Act (RCRA). Contact Nazdar's Regulatory Compliance Department or refer to the regulations located in 40 CFR Part 261 for additional waste disposal information, including appropriate hazardous waste codes. It is the responsibility of the user to determine if local, county, state, or provincial regulations may also apply to the disposal of this product and/or container. Empty containers may retain hazardous properties and should be disposed of in an environmentally safe manner in accordance with applicable regulations.

SECTION 14 -- TRANSPORT INFORMATION

TRANSPORT INFORMATION

Not regulated. The product(s) described by this Material Safety Data Sheet do not meet the definition of nor are they classified as a hazardous material/dangerous good as defined by the United States Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) or the Canadian Transportation of Dangerous Goods Act (TDG). Questions concerning transportation requirements should be directed to Nazdar's Regulatory Compliance Department 913-422-1735.

SECTION 15 -- REGULATORY INFORMATION

SARA TITLE III 313 INFORMATION

See Section 2 "Composition, Information on Ingredients" for applicable chemicals.

TOXIC SUBSTANCES CONTROL ACT STATUS

All ingredients in Section 2 are listed on the U.S. Environmental Protection Agency's Toxic Substances Control Act (TSCA) Inventory and the Canadian Domestic Substance List.

OTHER REGULATORY INFORMATION

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) - MSDS is compliant with Occupational Safety and Health Administration Hazard Communication Standard - 29 CFR 1910.1200. AMERICAN NATIONAL STANDARDS INSTITUTE - This MSDS follows the ANSI Z400.1-1998 format. WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM (WHMIS) - This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION (CANADA):

No Data Available

SECTION 16 -- OTHER INFORMATION

DISCLOSURE

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind express or implied is made with respect to the information contained herein. The data in this MSDS relates only to the specific material designated herein and does not apply to use in combination with any other material or process.

DEFINITIONS

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

CEILING: (TLV-Ceiling and PEL Ceiling Limit) The ceiling exposure limit or concentration not to be exceeded for even brief times.

DOT: Department of Transportation

HMIS: The Hazardous Materials Identification System (HMIS) developed by the National Paint and Coatings Association (NPCA) to provide information on the acute health hazards, reactivity and flammability of products encountered in the workplace at room temperatures.

HMIS codes assigned for this product are only suggested ratings based on anticipated normal screen printing applications. The employer has the ultimate responsibility for assigning these ratings and should fully evaluate the MSDS, work practices and environmental conditions prior to assigning the appropriate ratings.

HMIS rating involves data interpretations that may vary from company to company.

HMIS Personal Protection Index of "X-Ask your supervisor" is given on this MSDS due to varying work conditions which may dictate different levels of protection. Please review this MSDS before determining appropriate protective equipment and beginning work.

IARC: International Agency for Research on Cancer

NFPA: National Fire Protection Association

NTP: National Toxicology Program

STEL: Short-Term Exposure Limit: ACGIH terminology for the short-term exposure limit or maximum concentration for a continuous exposure period of 15 minutes.

TLV: Threshold Limit Value. A term ACGIH uses to express the airborne concentration of a material to which most workers can be exposed during a normal daily and weekly work schedule without adverse effects.

TWA: Time-Weighted Average

VOC: Volatile Organic Compound