

SECTION 1: PRODUCT AND COMPANY INFORMATION

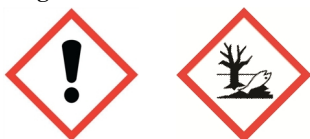
Product Name:	Conductive Electroplating Ink		
Product Use Description:	Preparing printed circuit boards for through-hole electroplating		
Company:	Think & Tinker, Ltd. 579 County Line Rd. Palmer Lake, CO 80133 USA		
Website:	www.thinktink.com		
Email:	support@thinktink.com		
Telephone:	719-488-9640	Emergency telephone:	719-358-1988

Section 2: Hazard Identification

Hazard Statements:

H319: May cause serious eye irritation: Category 2A
H320: Causes eye irritation, Category 2B
H335: May cause respiratory irritation Category 3
H410: Very toxic to aquatic life with long lasting effects

Pictograms:



Signal Word: Warning

Precautionary Statements:

P305 + P351 + P338: IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P304+341: IF INHALED, if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

Section 3: Composition / Information on Ingredients

Material	C.A.S No.	Weight Percentage
Proprietary Resins	N/A	<20
Graphite	7782-42-5	5 - 6
Carbon	1333-86-4	3 - 5
Silver	7440-22-4	17 - 20

Revision Date: September 11, 2015

Ethylene-glycol-monobutyl-ether-acetate	112-07-2	34
Diethylene glycol monoethyl ether acetate	112-15-0	6 – 13
Dimethyl glutarate	1119-40-0	14 – 22
Dimethyl Succinate	106-65-0	<5
Dimethyl adipate	627-93-0	<5

Section 4: First Aid Measures

Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Remove material from skin, eyes, and clothing. Get medical attention.
Skin Contact:	Immediately remove with soap and water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Rinse mouth with water. Consult a physician.
Notes to Physician:	N/A

Section 5: Firefighting Measures

Flash Point:	CLOSED CUP: 71.111°C (160°F), OPEN CUP: 87.78°C (190°F)
Suitable Extinguishing Media:	Water spray, foam, dry chemical, or carbon dioxide
Special Protective Equipment for Firefighters:	Firefighters, and others exposed, wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.
Special Hazards During Firefighting:	None known
Hazardous Decomposition:	Carbon monoxide (CO); carbon dioxide
Fire Hazards in Presence of Various Substances:	Flammable in presence of open flames and sparks, of heat, of oxidizing materials.
Special Remarks on Fire Hazards	When heated to decomposition it emits acrid smoke and irritating fumes.

Section 6: Accidental Release Measures

Personal Precautions:	Use personal protection recommended in section 8.
Environmental Precautions:	Keep out of drains and water courses.
Methods for Cleanup:	Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container

Section 7: Handling and Storage

Handling:	Keep container closed. Avoid breathing vapor or mist. Avoid contact with eyes Use with adequate ventilation.
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	Wash thoroughly after handling.
Storage:	<p>Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.</p> <p>Avoid all possible sources of ignition (spark or flame).</p> <p>Emptied containers retain vapor and product residue. Observe all recommended safety precautions until container is cleaned, reconditioned or destroyed.</p> <p>The reuse of this material's container for non-industrial purposes is prohibited, and any reuse must be in consideration of the data provided in this material safety data sheet.</p>

Section 8: Exposure Controls / Personal Protection	
Eye Protection:	Wear chemical goggles. Have eye flushing equipment available.
Hand Protection:	Minimize skin contamination by following good industrial practice. Wearing protective gloves is recommended. Consult the glove/clothing manufacturer to determine the appropriate type glove/clothing for a given application.
Skin and Body Protection:	<p>Minimize skin contamination by following good in contaminated skin thoroughly after handling.</p> <p>Safety glasses.</p> <p>Lab coat.</p> <p>Vapor respirator.</p> <p>Be sure to use an approved/certified respirator or equivalent.</p> <p>Gloves.</p>
Respiratory Protection:	Avoid breathing vapor or mist. Use approved respiratory protection equipment when airborne exposure limits are exceeded. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer. Use approved respiratory protection equipment when airborne exposure limits are exceeded.
Airborne exposure limits:	1.5 ml/m ³ ; 10 mg/m ³ ; 8-hr TWA (Solvent Only)
Ventilation:	Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits. If practical, use local mechanical exhaust ventilation at sources of air contamination such as processing equipment.
Engineering Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Section 9: Physical and Chemical Properties	
Form:	Liquid
Color:	Black / metallic silver appearance
Odor:	Sweet odor
Flash Point:	Closed cup: 71.111°C (160°F). Open cup: 87.78°C (190°F).
Auto-ignition Temperature:	340°C (644°F)
Initial Boiling Point:	191.3°C (376.3°F)
Vapor Pressure:	0 kPa (@ 20°C)
Relative Vapor Density:	5.5 (Air = 1)
Evaporation Rate:	Not available
Density:	1.55 gm/cc at 25°C
Bulk Density:	Not available
Water Solubility:	Soluble in cold water.

Revision Date: September 11, 2015

	Solubility in water @ 20 deg. C: 15000 mg/l. Soluble in hydrocarbons and organic solvents
pH:	Not available

Section 10: Stability and Reactivity	
Conditions to Avoid:	Heat, ignition sources (sparks, flames), incompatible materials
Materials to Avoid:	Reactive with oxidizing agents.
Hazardous Decomposition Products:	Carbon monoxide; carbon dioxide
Chemical Stability:	The product is stable

Section 11: Toxicological Information	
Routes of Entry	Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 2400 mg/kg [Rat]. Acute dermal toxicity (LD50): 1500 mg/kg [Rabbit].
Inhalation:	May cause respiratory tract irritation. It may also affect behavior/central nervous system with nausea, vomiting, headache and other CNS effects
Oral Toxicity:	May cause digestive tract irritation with nausea, vomiting, diarrhea. May affect the kidneys (Albuminuria, Hematuria), and behavior/central nervous system (headache, drowsiness, slurred speech, recrudescence stuttering, staggering gait, tremor, changes in personality, blurred vision).
Dermal Toxicity:	Slightly hazardous in case of skin contact (irritant)
Skin Irritation:	May cause mild skin irritation. It can be absorbed through the skin may affect the kidneys (hematuria), blood (normocytic anemia) and other systemic effects
Eye Irritation:	May cause mild eye irritation.
Sensitization:	Not known to cause skin sensitization Prolonged or repeated ingestion may affect the urinary system.

Section 12: Ecological Information	
Additional Ecological Information (Product):	This product has not been tested for environmental toxicity or biodegradation but is inherently biodegradable.

Section 13: Disposal Considerations	
<p>Recover material or dispose (incineration is preferred) in accordance with all applicable federal, state, and local regulations. Material collected with absorbent may be disposed in a permitted landfill in accordance with federal, state, and local regulations.</p> <p>Empty container may retain vapor or product residue.</p> <p>Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed.</p>	

Section 14: Transport Information	
DOT Classification:	Class 9
Proper Shipping Name:	Environmentally hazardous substances, liquid, n.o.s. silver

Revision Date: September 11, 2015

Section 15: Regulatory Information	
Federal and State Regulations	TSCA 8(b) inventory: 2-Butoxyethyl acetate
Other:	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances
HMIS Classification	
Health Hazard:	2
Chronic Health Hazard:	0
Flammability:	2
Reactivity:	0
PPI:	Gloves; Eye protection
WHMIS (Canada)	
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).	
DSCL (EEC)	
S24- Avoid contact with skin. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. R20/21- Harmful by inhalation and in contact with skin.	
National Fire Protection Association (NFPA)	
Class:	Not regulated
Emergency Planning Community Right-to-Know (EPCRA)	
SARA 302 Components:	If listed below, this product contains toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
SARA 313 Components:	CAS-NO. 112-15-2 CAS-NO. 7440-22-4
SARA 311/312 Hazards:	CAS No. 1333-86-4 Delayed (Chronic) Health Hazard Acute Health Hazard
Toxic Substances Control Act (TSCA) Status	
TSCA Status:	We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720.30(h).
Section 4/12(b):	Not applicable
Clean Air Act & Related Information	Not applicable
Ozone Depleting Substances:	Not applicable
Hazardous Air Pollutants:	If not listed below, this product does not contain HAPs at 1% or 0.1% or greater. Refer to Section 3 of HAP weight percentage.
Resource Conservation & Recovery Act	
EPA Hazardous Waste Code(s):	Not applicable
State Laws	
California Prop. 65 Components:	Not applicable
CONEG Heavy Metal:	We certify that this product does not contain Lead, Mercury, Cadmium or Hexavalent Chromium in the sum concentration of 100 ppm by weight or greater.
Massachusetts Right-to-Know Components:	Not applicable
Pennsylvania Right-to-Know Components:	CAS-NO. 112-15-2
New Jersey Right-to-Know Components:	CAS-NO. 112-15-2
New Jersey Trade Secret Registry Number for the Product (NJ)	Not applicable

Revision Date: September 11, 2015

TSRN):	
Coalition of Northeastern Governors (CONEG) Heavy Metal:	We certify that this product does not contain Lead, Mercury, Cadmium or Hexavalent Chromium in the sum concentration of 100 ppm by weight or greater.
International	
RoHS 2 2011/65/EU	Think & Tinker, Ltd. products do not exceed the amount of allowable levels concerning: Cadmium (Cd); Hexavalent Chromium (C); Mercury (Hg); Lead (Pb); Polybrominated Biphenyls (PBB's) as bromid; Polybrominated Diphenyl Ethers (PBDEs) as bromide, decaBDE
Registration, Evaluation and Authorization of Chemicals (EU - REACH) & Substances of Very High Concern (SVHC)	This product does not contain substances on the SVHC list.

Section 16: Other Information	
Product Designations:	CH29-0000-50 Conductive Electroplating Ink CH29-0000-100 Conductive Electroplating Ink CH29-0000-250 Conductive Electroplating Ink CH29-0000-500 Conductive Electroplating Ink CH29-0000-1000 Conductive Electroplating Ink
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