

BEST Inc

MATERIAL SAFETY DATA SHEET Silver Print Pen

SECTION I - NAME & PRODUCT

ADDRESS: BEST Inc CONTACT: info@solder.net

3603 Edison Place

Rolling Meadows IL 60008

TRADE NAME, COMMON NAME OR SPECIFICATION: Silver Print Pen

EMERGENCY TELEPHONE: 847-797-9250

APPROVED BY: Bob Wettermann August 6, 2013

SECTION II - COMPOSITION

CAS#	Chemical Name	% by weight	ACGIH TWA	Osha Pel	Osha Stel
7440-22-4	Silver	45-50%	1mg/m3	1mg/m3	N/E
108-88-3	Toluene	12-14%	50ppm	100ppm	150ppm
13-86-4	N-butyl acetate	8 - 10%	150 ppm	200 ppm	200 ppm
67-64-1	Acetone	4-5%	750ppm	1000ppm	1000ppm
110-19-0	2-methylpropyl ester acetic acid	2-4%	N/E	N/E	N/E
110-43-0	2-heptanone	2-4%	50ppm	100ppm	N/E
64-17-5	Ethyl alcohol	2-4%	200ppm	200ppm	250ppm
141-78-6	Ethyl acetate	1-2%	400ppm	400ppm	N/E
67-56-1	Methanol	< 1%	200ppm	250ppm	250ppm

SECTION III - PHYSICAL AND CHEMICAL DATA

BOILING POINT: 59°C SPECIFIC GRAVITY (BULK): 1.85g/L@22°C VAPOR PRESSURE:1PSI@21°C
PERCENT VOLATILE BY VOL.: NA VAPOR DENSITY: 4.1 (Air=1)

EVAPORATION RATE: Fast SOLUBILITY IN WATER: Partial

SOLUBILITY IN OTHER SOLVENTS: NA APPEARANCE & ODOR: Liquid, ethereal odor

STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and pressures.

Conditions to avoid: Temperatures over 40°C, ignition sources, and incompatible substances.

Incompatibilities: Alkali and alkaline earth metals, powdered aluminum, zinc, magnesium, and beryllium, lithium aluminum hydride, potassium tert-butoxide, nitrates, strong acids, strong oxidizers, chlorosulphonic acid, hydrogen peroxide.

Polymerization: Will not occur.

Decomposition: Carbon monoxide, carbon dioxide, nitrogen oxides

SECTION IV - FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA METHOD USED: FLAMMABLE LIMITS:

EXTINGUISHING MEDIA: Not flammable, use a dry chemical

SPECIAL FIRE FIGHTING PROCEDURES: Use sufficient local exhaust to reduce the dust. Use self-contained breathing apparatus, NIOSH approved, to avoid dust or fumes generated during fire fighting efforts.

SECTION V - HEALTH HAZARD DATA

Sensitization: (effects of repeated exposure) Prolonged or repeated skin contact may cause dermatitis.

Carcinogenicity: (risk of cancer) No

Teratogenicity: (risk of malformation in an unborn fetus) No

Reproductive Toxicity: (risk of sterility) No

Mutagenicity: (risk of heritable genetic effects) No

Lethal Exposure

Concentrations:	Ingestion (LD50):	Inhalation (LC50):	Skin (LD50):	Inhalation (TCLo):
Silver	N/A	N/A	N/A	10 mg/ m ³ /2H Mouse
Toluene	636 mg/kg Rat	49 gm/ m ³ /4H	14100 U1/kg	1000 ppm/6H Rat
N-butyl acetate	5620 mg/kg	200 gm/ m ³	>20 mL/kg	200 ppm/6H
Ethyl acetate	Rat	Rat	Rabbit	Mouse
2-methyl propyl ester	13400 mg/kg	N/A	>17400 mg/kg	N/A

acetic acid	Rat		Rabbit	
2-heptanone	1670 mg/kg	N/A	12600 uL/kg	7000 mg/ m ³ /4H
	Rat		Rabbit	Guinea Pig
Ethyl alcohol	7060 mg/kg	20000 ppm/10H	N/A	50000 mg/ m ³ /2H
	Rat	Rat		Mouse
Acetone	5800mg/kg	50100 mg/ m ³ /8H	20ml/kg	30000 mg/m ³ /2H
	Rat	Rat	Rabbit	Mouse
Acrylic Resin	N/A	N/A	N/A	N/A
Methanol	5600 mg/kg	81000 mg/ m ³ /14h	15800 mg/kg	6.5 mg/ m ³ /4W
		Rabbit	Rabbit	

Eyes: Liquid in contact with eyes may cause permanent eye damage.

Skin: May cause skin irritation and possible pain and stinging if the skin is abraded.

Inhalation: Solvents may cause respiratory tract irritation, headache, and possible dizziness.

Ingestion: May cause respiratory and digestive tract irritation.

Chronic: Prolonged and repeated exposure may cause dermatitis, defatting of the skin, liver and kidney damage, and adverse central nervous system effects.

FIRST AID MEASURES

Eyes: Remove contact lenses. Flush with water .Get medical aid.

Skin: Wash skin with soap and water. Get medical aid if symptoms persist.

Inhalation: Immediately remove from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Ingestion: Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

SECTION VI - SPILL, LEAK & DISPOSAL

SPILL PROCEDURE: Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbent compound onto spill, then sweep into a plastic or metal container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water.

DISPOSAL TECHNIQUE: Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

FIRE FIGHTING MEASURES

Autoignition Temperature: 465°C Flash Point: -18°C LEL / UEL: 1 / 36

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

General Information: Will burn if involved in a fire. Flash back along vapor trail is possible.

SECTION VII - SPECIAL PROTECTION INFORMATION

Routes of entry: Eyes, ingestion, inhalation, and skin.

Ventilation: Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protection: Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary. Routes of entry: Eyes, ingestion, inhalation, and skin.

Ventilation: Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protection: Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

SECTION VIII - SPECIAL PRECAUTIONS & COMMENTS

Handling: Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Do not expose container to heat or flame.

Storage: Keep away from sources of ignition. Store in a cool, dry, well-ventilated area, away from incompatible substances. Keep from freezing.

ECOLOGICAL INFORMATION

General Information: Avoid runoff into storms and sewers, which lead into waterways.

Water runoff can cause environmental damage

Volatile Organic Compounds, % by weight: 40.15%

Volatile Organic Compounds, grams per litre: 742.8 g/L

TRANSPORTATION INFORMATION

Ground Canada: 4L size and smaller: Classified as Consumer Commodity. Recommend Shipper be trained and certified. Refer to TDG regulations

(Canadian Transportation of Dangerous Goods regulations).

Ground USA: - 4L size and smaller

Classified as ORM-D. Recommend Shipper be trained and certified. Refer to USA CFR 49 Regulations (Parts 100 to 85).

Air: (all sizes).

Shipper must be trained and certified. Refer to IATA Dangerous Goods Regulations.

UN number: 1263, Shipping Name: PAINT, Class: 3, Packing Group: II, Flash Point: -18°C. Subsidiary Risk – nil,

Recommend using original MG Chemicals certified outer cartons. Tape all seams on the carton. Hazard Label required –

Flammable Liquid. A double arrow orientation label is required and is already printed on the original outer carton.

Sea - (all sizes).

Shipper must be trained and certified. Refer to IMDG regulations. Shipping Name: PAINT, UN number: 1263,

Class: 3, Packing Group: II, Flash Point: -18°C. Storage category "A", segregation as for class 9 but away from sources of heat and separated from goods of class 1 except for those in division 1.4.

USA REGULATORY INFORMATION

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain any chemicals listed as hazardous air pollutants.

SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

This product contains Toluene (CAS# 108-88-3, 13%) and Silver (CAS #7440-22-4 45%), toxic chemicals 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

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains the following chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372: Toluene CAS# 108-88-3, (13%) and Silver (CAS #7440-22-4 45%)

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

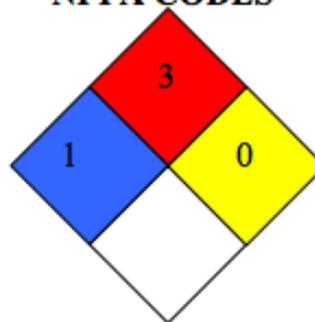
California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)

This product contains toluene listed under chemicals known to the state to cause reproductive toxicity and cancer.

HMIS RATING

HEALTH:	1
FLAMMABILITY:	3
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA CODES



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