

Safety Data Sheet

Revision Date 06/23/2023

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name & Catalog # : Conducting Silver Paint - 60805, 60805T and 60805P
Product Use : For industrial use only. Paste for electronic industry.

Manufacturer/Supplier : Ladd Research
3 Ewing Place
Essex Junction, VT 05452 USA

Product Information : 1-802-658-4961

Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

Flammable liquids	Category 3
Reproductive toxicity	Category 2
Specific target organ toxicity - single exposure	Category 3

Label content

Pictogram



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Signal word	: Warning
Hazardous warnings	: Flammable liquid and vapour. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of damaging fertility or the unborn child.
Hazardous prevention measures	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection. Use personal protective equipment as required. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 52.4579 %

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
1-Methoxy-2-propyl acetate	108-65-6	20 - 30 %
n-Butyl acetate	123-86-4	20 - 30 %
Silver powder	7440-22-4	40 - 50 %
Dibutyl phthalate	84-74-2	1 - 5 %
Acrylic resin	65859-05-4	5 - 10 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice	: No applicable data available.
Inhalation	: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	: Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
Eye contact	: Immediately flush eyes for at least 15 minutes. Get medical attention.
Ingestion	: If swallowed Rinse mouth with water. Call a physician or poison control centre immediately. DO NOT induce vomiting unless directed to do so by a physician or poison control center.

Most important symptoms/effects, acute and delayed	: No applicable data available.
Protection of first-aiders	: No applicable data available.
Notes to physician	: No applicable data available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, Dry chemical, Carbon dioxide (CO ₂)
Unsuitable extinguishing media	: No applicable data available.
Specific hazards	: Hazardous decomposition products formed under fire conditions. (see also section 10) Avoid breathing decomposition products.
Special protective equipment for firefighters	: Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus for firefighting if necessary.
Further information	: Evacuate personnel to safe areas. Stop spill/release if it can be done with minimal risk. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Wear suitable protective equipment.
Environmental precautions	: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Clean contaminated floors and objects thoroughly while observing environmental regulations.
Spill Cleanup	: Contain spill. Soak up with inert absorbent material. Collect and contain contaminated absorbent and dike material for disposal. Keep in suitable,

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closed containers for disposal. Ventilate the area. Clean contaminated surface thoroughly.

Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid inhalation, ingestion and contact with skin and eyes. Do not use in areas without adequate ventilation. Keep container closed when not in use. Take care to avoid waste and spillage when weighing, loading and mixing the product.
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing and protective equipment before entering eating areas. Remove and wash contaminated clothing before re-use.

Handling (Physical Aspects) : Avoid formation of dust and aerosols. Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge. Static charges can cause explosions in solvent and dust laden atmospheres.

Dust explosion class : No applicable data available.
Storage : Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from sources of ignition - No smoking. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Keep container closed when not in use. Do not reuse empty container.
Stable under normal conditions.

Storage period : No applicable data available.

Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Local exhaust or a laboratory hood should be used when handling the materials. Maintain air concentrations below occupational exposure standards.

Personal protective equipment
Respiratory protection : Provide adequate ventilation. No personal respiratory protective equipment

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normally required. Where there is potential for airborne exposures in excess of applicable limits, wear approved respiratory protection with dust/mist cartridge. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

- Hand protection : Material: Impervious gloves
Additional protection: Gloves must be inspected prior to use., Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough., The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., The exact break through time can be obtained from the protective glove producer and this has to be observed., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Eye protection : Wear safety glasses with side shields.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Lightweight protective clothing
Safety shoes

Exposure Guidelines Exposure Limit Values

1-Methoxy-2-propyl acetate

AEL *	(DUPONT)	30 ppm	15 minute TWA
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n-Butyl acetate

Permissible exposure limit:	(OSHA)	150 ppm	710 mg/m3	8 hr. TWA
TLV	(ACGIH)	150 ppm	TWA	
TLV	(ACGIH)	200 ppm	STEL	

Silver powder

Permissible exposure limit:	(OSHA)	0.01 mg/m3	8 hr. TWA as Ag
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TLV	(ACGIH)	0.1 mg/m ³	TWA Dust and fume.
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Dibutyl phthalate			
Permissible exposure limit:	(OSHA)	5 mg/m ³	8 hr. TWA
TLV	(ACGIH)	5 mg/m ³	TWA

Acrylic resin
No applicable data available.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	: liquid
Form	: viscous liquid
Color	: grey

Odor : like fruit

Odor threshold : No applicable data available.

pH : No applicable data available.

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : 32 °C
Method: closed cup

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

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Lower explosion limit	: No applicable data available.
Vapour Pressure	: No applicable data available.
Vapour density	: No applicable data available.
Density	: 1.33 g/cm ³
Specific gravity (Relative density)	: No applicable data available.
Water solubility	: at 20 °C (68 °F) slightly soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: > 20.5 mm ² /s at 40 °C (104 °F) estimated
Viscosity, dynamic	: 0.1 - 1 Pas at 25 °C (77 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No applicable data available.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Acids, bases and strong oxidizing agents
Hazardous decomposition products	: No decomposition if stored and applied as directed. Under fire conditions: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).,

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Metal oxides

SECTION 11. TOXICOLOGICAL INFORMATION

1-Methoxy-2-propyl acetate

Inhalation 4 h LC50	:	> 35.2 mg/l , Rat
Dermal LD50	:	> 5,000 mg/kg , Rabbit
Oral LD50	:	8,532 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig
Repeated dose toxicity	:	Inhalation Rat - 24 Months vapour NOAEL: 1.1 mg/l LOAEL: 3.69 mg/lMethod: see user defined free text No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	:	Evidence suggests the substance is not a developmental toxin in animals. Information given is based on data obtained from similar substances.

n-Butyl acetate

Inhalation 4 h LC50	:	> 21.1 mg/l , Rat
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Target Organs: Central nervous system
Central nervous system depression

Dermal LD50	:	> 14,112 mg/kg , Rabbit
Oral LD50	:	14,130 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit slight irritation
Eye irritation	:	No eye irritation, Rabbit slight irritation
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig Does not cause respiratory sensitisation., Mouse
Repeated dose toxicity	:	Inhalation Rat - No toxicologically significant effects were found.
Carcinogenicity	:	Not classifiable as a human carcinogen. Information given is based on data obtained from similar substances.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects. Information given is based on data obtained from similar substances.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
Teratogenicity	:	Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Silver powder

Oral LD50	:	> 2,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit

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Skin sensitization	:	There are rare or inconclusive reports of human skin sensitization.
Repeated dose toxicity	:	Oral Rat - altered blood chemistry
Carcinogenicity	:	An increased incidence of tumours was observed in some laboratory animals but not in others.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others. Information given is based on data obtained from similar substances.
Teratogenicity	:	Evidence suggests the substance is not a developmental toxin in animals. Information given is based on data obtained from similar substances.

Dibutyl phthalate

Inhalation 4 h LC50	:	> 15.68 mg/l , Rat
Dermal LD50	:	21,000 mg/kg , Rabbit
Oral LD50	:	6,279 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit
Skin sensitization	:	Did not cause sensitisation on laboratory animals., Guinea pig There are rare or inconclusive reports of human skin sensitization.
Repeated dose toxicity	:	Dermal Rabbit - Skin effects, Kidney effects, Weight loss Oral Rat - Liver effects, Kidney effects, Increased liver enzyme levels in serum

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Inhalation
animals (unspecified species)
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Liver effects

Mutagenicity : Animal testing did not show any mutagenic effects.
Did not cause genetic damage in animals.
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
Genetic damage in cultured bacterial cells was observed in some laboratory tests but not in others.

Reproductive toxicity : Suspected human reproductive toxicant
Experiments have shown reproductive toxicity effects on laboratory animals.
Reduced fertility
Reduced embryo-foetal viability

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

1-Methoxy-2-propyl acetate

96 h LC50	: Oncorhynchus mykiss (rainbow trout) > 100 mg/l OECD Test Guideline 203
96 h ErC50	: Pseudokirchneriella subcapitata (green algae) > 1,000 mg/l OECD Test Guideline 201
96 h NOEC	: Pseudokirchneriella subcapitata (green algae) > 1,000 mg/l OECD

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Test Guideline 201

48 h EC50	:	Daphnia magna (Water flea) > 500 mg/l
14 d	:	NOEC Oryzias latipes (Orange-red killifish) 47.5 mg/l OECD Test Guideline 204
21 d	:	NOEC Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 211

n-Butyl acetate

96 h LC50	:	Pimephales promelas (fathead minnow) 18 mg/l OECD Test Guideline 203
72 h ErC50	:	Desmodesmus subspicatus (green algae) 648 mg/l
48 h EC50	:	Daphnia magna (Water flea) 44 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 23 mg/l OECD Test Guideline 211

Silver powder

96 h LC50	:	Pimephales promelas (fathead minnow) 0.0012 mg/l Information given is based on data obtained from similar substances.
24 h EC100	:	Pseudokirchneriella subcapitata (green algae) 0.00041 mg/l Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) 0.00022 mg/l Information given is based on data obtained from similar substances.
28 d	:	NOEC Pimephales promelas (fathead minnow) 0.000351 mg/l Information given is based on data obtained from similar substances.

Dibutyl phthalate

96 h LC50	:	Pimephales promelas (fathead minnow) 1.30 mg/l
96 h LC50	:	Fish (unspecified species) 0.35 mg/l
72 h EC50	:	Algae 1.2 mg/l
72 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 1.39 mg/l
72 h EbC50	:	Pseudokirchneriella subcapitata (green algae) 0.555 mg/l

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72 h ErC50	:	Desmodesmus subspicatus (green algae) 8.38 mg/l
72 h EbC50	:	Desmodesmus subspicatus (green algae) 2.12 mg/l
48 h EC50	:	0.76 mg/l
48 h EC50	:	Daphnia magna (Water flea) 2.2 mg/l
21 d	:	NOEC Daphnia magna (Water flea) 0.11 - 1.05 mg/l

Environmental Fate

n-Butyl acetate

Biodegradability	:	96 % OECD Test Guideline 301D Readily biodegradable
Bioaccumulation	:	Bioconcentration factor (BCF) : 15.3 Bioaccumulation is unlikely.

Silver powder

Biodegradability	:	Not inherently biodegradable.
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Dibutyl phthalate

Biodegradability	:	Readily biodegradable 72 %
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SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	If recycling is not practicable, dispose of in compliance with local regulations. Never place unused product down any indoor or out door drain.
Waste disposal methods - Container	:	Do not reuse empty container. Contaminated/not cleaned containers should be treated/handled like product waste. Dispose of container properly. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.
Contaminated packaging	:	No applicable data available.

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SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1993
	Proper shipping name	: Flammable liquids, n.o.s. (1-Methoxy-2-propyl acetate, n-Butyl acetate)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3
	Reportable Quantity	: 10 lbs Dibutyl phthalate
IATA_C	UN number	: 1993
	Proper shipping name	: Flammable liquid, n.o.s. (1-Methoxy-2-propyl acetate, n-Butyl acetate)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3
	Reportable Quantity	: 10 lbs Dibutyl phthalate
IMDG	UN number	: 1993
	Proper shipping name	: FLAMMABLE LIQUID, N.O.S. (1-Methoxy-2-propyl acetate, n-Butyl acetate)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3
	Reportable Quantity	: 10 lbs Dibutyl phthalate

SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: Silver powder, Dibutyl phthalate
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Silver powder, n-Butyl acetate, Dibutyl phthalate
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as

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carcinogens, mutagens or teratogens): Silver powder, n-Butyl acetate, Dibutyl phthalate

CERCLA Reportable Quantity : 667 lbs
Based on the percentage composition of this chemical in the product.:
Dibutyl phthalate

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.Toluene, Dibutyl phthalate

SECTION 16. OTHER INFORMATION

Revision Date : 06/23/2023

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.