

MATERIAL SAFETY DATA SHEET

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HMIS: H1* F1 R0
*Chronic Health Hazard

SECTION I

PRODUCT CLASS: Printing Ink Drier
TRADE NAME: Super Cobalt Drier
PRODUCT NUMBER: D-22
CHEMICAL FAMILY: Metal Carboxylate

SECTION II — HAZARDOUS COMPONENTS

COMPONENT	CAS NO.	% WT.	EXPOSURE GUIDELINES				UNITS
			OSHA		ACGIH		
			PEL TWA	STEL	TLV TWA	STEL	
Cobalt Tallate	61789-52-4	70	0.1+	NE	0.02	NE	mg/m ³
Petroleum Hydrocarbon	64741-44-2	15	5*	NE	5*	10*	mg/m ³
Residual Oil, Dewaxed	64742-62-7	13	NE	NE	NE	NE	NE
Polypropylene Glycol	25322-69-4	2	NE	NE	NE	NE	NE

*The Manufacturer Recommended Exposure Limit of Mineral Spirits (8052-41-3) is 100 ppm.

+OSHA 29 CFR 1910.1000 Table Z-1-A (Final Rule) Ceiling list for Manganese Compounds (as Mn) and Cobalt metal, dust and fume (as Co)

+OSHA 29 CFR 1910.1000 Table Z-1-A (Final Rule) TWA list for Stoddard Solvent

SECTION III — PHYSICAL DATA

BOILING RANGE/POINT: IBP 510°F EP 650°F
SOLUBILITY IN WATER: Moderate
VAPOR PRESSURE: <1mm Hg @ 125°F (for heavy distillates)
VAPOR DENSITY (AIR=1): Heavier
EVAPORATION RATE (Butyl Acetate=1): Slower than Ether
APPEARANCE: Purple Viscous Liquid
ODOR: Sweet
% VOLATILE BY WEIGHT: 5
% VOLATILE BY VOLUME: 5
SPECIFIC GRAVITY @ 25°C: 0.99

SECTION IV — FIRE AND EXPLOSION DATA

FLAMMABILITY CLASSIFICATION
OSHA: CLASS III B DOT: Not Regulated FLASH PT. (°F) 230
LEL: No Data
UEL: No Data
AUTOIGNITION TEMP (°F): 495

EXTINGUISHING MEDIA: Use foam, CO₂ or dry chemical.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Dense smoke may be generated when burning.

SPECIAL FIRE FIGHTING PROCEDURES: Water may be ineffective by can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

SECTION V — HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: Inhalation: X Eyes: X Skin: X Ingestion: X

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Exposure to cobalt compounds may cause sensitization by inhalation and skin contact. Product may be irritating to the eyes, skin and respiratory tract. May be harmful if swallowed. Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Wash hands thoroughly after handling.

MEDICAL CONDITION PRONE TO AGGRAVATION BY EXPOSURE: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

SECTION V — HEALTH HAZARD DATA (cont'd)

EYE CONTACT: Avoid eye contact. This product may be irritating to the eyes upon direct contact. Based on testing of similar products and/or components, this product has a low vapor pressure and is not expected to present a hazard to the eyes at ambient conditions; however exposure to high concentrations of vapors may be irritating to the eyes.

SKIN CONTACT: Avoid skin contact. May cause sensitization by skin contact. Cobalt compounds have been shown to produce dermatitis and investigators have been able to demonstrate a hypersensitivity of the skin to cobalt. This product may cause skin irritation upon direct contact. Based on testing, of similar products and/or components, prolonged or repeated contact may result in contact dermatitis which is characterized by dryness, chapping, and reddening. This condition may make the skin more susceptible to other irritants, sensitizers, and disease. Pre-existing skin conditions may make the skin more susceptible and facilitate uptake by this route.

INGESTION: Do not ingest. Ingestion of small quantities is usually nonfatal unless aspiration occurs. Aspiration may lead to chemical pneumonitis which is characterized by pulmonary edema and hemorrhage and may be fatal. Signs of lung involvement include increased respiratory rate, increased heart rate, and a bluish discoloration of the skin, coughing, choking, and gagging are often noted at the time of aspiration. Gastrointestinal discomfort may develop, followed by vomiting with a further risk of aspiration. Ingestion may cause gastrointestinal distress. Severe oral intoxication will lead to intense burning of the throat and may result in drowsiness, dullness, numbness, and headache followed by dizziness, weakness, and nausea. Loss of consciousness and convulsions followed by death may result.

INHALATION: May cause sensitization by inhalation. Prolonged inhalation of cobalt dust, or metal dust, fume or mist containing cobalt may cause respiratory illness. A void prolonged inhalation of mist or vapors. This product has a low vapor pressure and is not expected to present an inhalation hazard at ambient conditions. Caution should be taken to prevent aerosolization or misting of this product. The Permissible Exposure Limit (PEL) and Threshold Limit Value (TL V) for this product as oil mist is 5 mg/m³. Exposures below 5 mg/m³ appear to be without significant health risk. The short-term exposure limit for this product as oil is 10 mg/m³. Acute and chronic overexposures may be irritating to the respiratory tract. Severe intoxication may lead to drowsiness, dullness, numbness, and headache followed by dizziness, weakness, and nausea.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Immediately flush with large amounts of water and continue flushing until irritation subsides. If irritation persists, seek medical attention.

SKIN: Remove contaminated shoes and clothing, and flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention. Launder clothing before reuse.

INGESTION: Aspiration hazard. Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If vomiting occurs, lower head below knees to avoid aspiration. Seek immediate medical attention.

INHALATION: This material has a low vapor pressure and is not expected to present an inhalation exposure at ambient conditions. If vapor or mist is generated when the material is heated or handled, remove victim from exposure. If breathing has stopped or is irregular, administer artificial respiration and supply oxygen if it is available. If victim is unconscious, remove to fresh air and seek medical attention

SECTION VI — REACTIVITY DATA

PRODUCT STABILITY: Stable

INCOMPATIBILITY (Materials to Avoid): Avoid contact with oxidizing agents.

CONDITIONS TO AVOID: Use product with caution around heat, sparks, pilot lights, static electricity and open flame.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, toxic fumes of cobalt oxide.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VII — PRECAUTIONS FOR SAFE HANDLING AND USE

PROCEDURE WHEN MATERIAL SPILLED OR RELEASED: Eliminate all ignition sources. Prevent spilled material from entering sewers, storm drains, other authorized treatment drainage systems, and natural waterways. Stop spill/release if it can be done with minimal risk. Provide adequate ventilation during clean-up. Absorb with solvent absorbent material. Large spills may be picked up using vacuum pumps, shovels, buckets, or other means and placed in drums or other suitable containers. Dispose according to federal, state and local regulations.

WASTE DISPOSAL METHOD: As local regulations may vary, all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations. This product is a RCRA hazardous waste if discarded in the produced form due to ignitibility. Empty containers must be handled with care due to material residue. Empty containers should be completely drained, properly bunged and shipped to a drum re-conditioner.

HANDLING: Cobalt carboxylates may cause the ignition of rags or paper goods or other oxidizable materials. Keep container closed. Handle and open containers with care. Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. The use of explosion-proof equipment is recommended and may be required. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures. Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning. "Empty" drums should be completely drained and properly bunged. All other containers should be disposed of in an environmentally safe manner and in accordance with government regulations. Do not transfer to any unlabeled container. Wash exposed skin thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice. This product is for industrial use only. **Warning:** Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperatures and pressures or sudden ingress of air into vacuum equipment may result in ignitions without the presence of obvious ignition sources. Published "autoignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

STORAGE: Keep container(s) tightly closed. Use and store this material in a cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post "NO SMOKING OR OPEN FLAME," Store only in approved containers. Keep away from any incompatible material. Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

SECTION VIII — EMPLOYEE PROTECTION

VENTILATION: Provide sufficient mechanical (general) and/or local exhaust ventilation to maintain exposure below TLVs. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

PROTECTIVE GLOVES: Appropriate disposable gloves are acceptable. Resistant gloves such as Nitrile rubber can be worn. Consult your safety equipment supplier.

RESPIRATORY PROTECTION: When exposures are not adequately controlled, use respirator approved for protection from organic vapors. If workplace exposure limit(s) of product or any component is exceeded, a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (See your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

EYE PROTECTION: Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other types of safety glasses.

OTHER PROTECTIVE CLOTHING AND EQUIPMENT: Eye wash and quick-drench shower facilities. Impervious clothing and boots are recommended. Thoroughly clean shoes and wash contaminated clothing before reuse.

WORK/HYGIENIC PRACTICES: Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry clean before reuse. Remove contaminated shoes and thoroughly clean before reuse. Wash thoroughly after contact, before breaks and meals, and at the end of the day.

SECTION IX — OTHER REGULATORY CONTROLS

TSCA: Ingredients of this product are listed on the US TSCA Inventory of Chemical Substances.

CALIFORNIA PROPOSITION 65: This material may contain the following chemicals which are known to the State of California to cause cancer or birth defects. However, we do not conduct routine analysis for all listed materials.

CLEAN AIR ACT S112 HAZARDOUS AIR POLLUTANTS: Cobalt Compounds.

SECTION 313 SUPPLIER NOTIFICATION: This product contains the following toxic chemicals that are subject to the reporting requirements of Section 313 the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372:

<u>Reportable Substance</u>	<u>% by Weight</u>
Cobalt Compound	70

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE LIST 40 CFR 355: This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substance List.

SARA 311, 312 HAZARD CLASS: Acute health hazard. Chronic health hazard. Fire hazard.

AUSTRALIAN INVENTORY CHEMICAL SUBSTANCES: All components are listed on the Australian Core Inventory of Chemical Substances (ACoin).

CANADIAN INVENTORY: All components are listed on the Domestic Substance List (DSL).

EINECS REGULATIONS: All components are listed on the European Inventory of Existing Commercial Substances (EINECS).

JAPAN: All components are listed on the Japanese Existing and New Chemical Substances (ENCS). Cobalt Tallate is a Class I regulated substance, number 100, as Cobalt Compounds. The annual threshold quantity is 1.0 tons [*JAPANESE POLLUTANT RELEASE TRANSFER REGISTER (PRTR)*].

KOREAN CHEMICAL INVENTORY: All components are listed on the Korean List of Existing Chemical Substances.

PHILIPPINE INVENTORY: All components are listed on the Philippines Inventory of Chemical and Chemical Substances (PICCS).

TOXICITY DATA: IARC has stated that there is sufficient evidence for the carcinogenicity of Cobalt metal powder in experimental animals. On the basis of animal evidence from experiments not regarded as relevant to human exposure, IARC has classified Cobalt as 2B, possible carcinogen for humans. ACGIH has given Cobalt a rating of A3, animal carcinogen. They state that "available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Similar composition middle distillates have been found to be weakly to moderately tumorigenic in mouse skin-painting bio-assays. It is suspected these tumors may be due in part to chronic skin irritation resulting from continuous contact with the test substance. The (ARC has concluded that light and intermediate middle distillates arc group 3 substances, "not classifiable as to their carcinogenicity to humans," based on inadequate human and inadequate animal evidence.

ACUTE ORAL LD50: No data at this time.

ACUTE DERMAL LD50: No data at this time.

ACUTE INHALATION LC50: No data at this time.

SECTION X — TRANSPORTTION

DOT SHIPPING NAME: Not Regulated

DOT HAZARD CLASS: None

AIR FREIGHT TRANSPORTATION: Not Regulated

DOT PACKING GROUP: None

OCEAN TRANSPORTATION: Not Regulated

NA or UN Number: None

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