

ALLEN AVIONICS, INC.

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MATERIAL SAFETY DATA SHEET FOR RT012 INK 02/211/07

Revised 1/16/07 MSDS ID:8048780 AND 8047811 RoHS COMPLIANT INK

SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT PART NUMBER: 8048780 PRODUCT PART NUMBER: 8047811
DESCRIPTION: RTO12 WHITE DESCRIPTION: RTO12 BLACK

MANUFACTURED FOR
ALLEN AVIONICS INC
255 EAST SECOND ST
MINEOLA, NY 11501

516-248-8080

EMERGENCY RESPONSE NUMBERS:

Transportation:

United States: (800) 424-9300

03431 International: (703) 527-3887(collect)

SECTION 2- HAZARDOUS INGREDIENTS

COMPONENT	CAS # W	PCT(WT)W	CAS # B	PCT(WT)B
Diethylene glycol monobutyl ether	112-34-5	0.5-1.5	112-34-5	1-5
2-(2-butoxyethoxy) ethyl acetate	124-17-4	3-7	124-17-4	5-10
Carbon black (black only)			1333-86-4	7-13
Methyl ethyl ketoxime	96-29-7	0.1-1	96-29-7	0.1-1
Cobalt naphthanate	61789-51-3	0.1-1	61789-51-3	0.5-1.5
Cobalt neodecanoate	27253-31-2	0.1-1	27253-31-2	0.5-1.5
Silica, amorphous	7631-86-9	1-5	7631-86-9	1-5
Stoddard Solvent	8052-41-3	0.5-1.5	8052-41-3	1-5
Tung oil, polymer with p-tert-butylphenol, formaldehyde and linseed oil	67700-70-3	40-60	67700-70-3	60-80

Exposure and physical property information is presented in Section 9.

If the total percentage is less than 100, the balance of this product is not considered to be hazardous as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 3- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS RATING SYSTEM (W)	NFPA RATING SYSTEM (B)	HMIS RATING SYSTEM (W)	NFPA RATING SYSTEM (B)
Health: 2	Health: 2	Health: 2	Health: 2
Flammability: 2	Flammability: 2	Flammability: 1	Flammability: 1
Reactivity: 0	Reactivity: 0	Reactivity: 0	Reactivity: 0
Protection: B		Protection: B	

POTENTIAL HEALTH CONSIDERATIONS

LIKELY ROUTES OF ENTRY:
Inhalation; Contact; Absorption

TARGET ORGANS: Kidneys; Eyes; Skin; Digestive Tract; Nervous System; Blood; Liver; Lungs; Respiratory Tract; Heart; Pancreas;

POTENTIAL IMMEDIATE EFFECTS FROM OVEREXPOSURE

EYE CONTACT: Can cause severe eye irritation, tearing and reddening, but not likely to permanently injure eye tissue. Temporary vision impairment (cloudy or blurred vision) is possible.

SKIN CONTACT: Can cause minor skin irritation, defatting or dermatitis. Skin Sensitizer! Avoid exposure. If sensitized, repeated exposures will result in skin irritation, even at very low concentrations.

SKIN ABSORPTION: Toxic if absorbed through the skin causing systemic damage.

SECTION 3- HAZARDS IDENTIFICATION (Cont)

INHALATION: Can cause respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness. Respiratory Sensitizer! Avoid exposure. If sensitized, repeated exposures will result in respiratory irritation and shortness of breath, even at very low concentrations. These asthma-type symptoms may develop immediately or be delayed up to several hours. Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to the respiratory tract.

INGESTION: Toxic. If swallowed, may cause abdominal discomfort, nausea, vomiting, diarrhea and systemic poisoning.

POTENTIAL LONG-TERM EFFECTS FROM OVEREXPOSURE:

CANCER INFORMATION : Contains a substance that can cause cancer in laboratory animals at high oral doses. Not a carcinogen according to NTP, IARC, or OSHA. No IARC cancer hazard information available. No ACGIH cancer hazard information available. No NTP cancer hazard information available. No OSHA cancer hazard information available.

REPRODUCTIVE SYSTEM INFORMATION: None of the substances in this product have been shown to cause reproductive system disorders.

ADDITIONAL HEALTH HAZARD INFORMATION

Cobalt: IARC has classified cobalt and cobalt compounds as Group 2B carcinogens. Group 2B carcinogens are possibly carcinogenic to humans. Diglycol ethers may cause acidosis. Preexisting disorders of the liver, lungs, kidney, or blood-forming system may be aggravated by exposure to this material.

Methyl Ethyl Ketoxime (MEKO): This substance has the potential to cause methemoglobin, cataract formation, and histopathological changes in the upper respiratory tract. MEKO is a known rodent liver carcinogen. Alcohol metabolism may be inhibited by MEKO.

Amorphous silica: This product contains amorphous silica. Silica can be hazardous if respired into the lungs. The silica in this product is bound to the polymers present in the ink and will not become a hazard unless the printed surface is abraded in a manner that creates respirable dust.

MEDICAL CONDITIONS ARE POTENTIALLY AGGRAVATED BY OVEREXPOSURE

SECTION -4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Get immediate medical attention.

SKIN CONTACT: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

INHALATION: Remove to fresh air. If not breathing, perform rescue breathing and, if available, have a trained person administer oxygen. Get medical attention immediately.

INGESTION: Emergency personnel should be contacted immediately and be provided with this MSDS. For ingestion of small quantities of chemicals, the risk associated with inducing vomiting usually exceeds the poisoning risk.

SECTION - 5. FIRE FIGHTING MEASURES

FLAMMABILITY DATA

FLASH POINT:

WHITE

145 F, 63 C

BLACK

237F, 113C

EXPLOSIVE/FLAMMABILITY LIMITS ESTIMATED FROM INGREDIENTS:

LOWER LIMIT: 0.8

UPPER LIMIT: 24.6

LOWER LIMIT: 0.8

UPPER LIMIT: 24.6

AUTOIGNITION TEMPERATURE ESTIMATED FROM INGREDIENTS:

394 F, 201 C

394 F, 201 C

GENERAL HAZARDS Vapors may be ignited by heat, sparks, flames or other sources of ignition if heated above the flash point. Vapors are heavier than air and may travel to a source of ignition and flash back. Container may explode in heat of fire. Empty container may still contain residual material that can ignite and/or explode. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty container to heat, flame, sparks, static electricity, or other sources of ignition.

SECTION - 5. FIRE FIGHTING MEASURES (CONT)

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide (CO₂) or dry chemical. Water may not be effective to extinguish fire. Use water spray to cool fire-exposed containers and to protect personnel.

FIRE FIGHTING INSTRUCTIONS: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location. Heat may build pressure and rupture closed containers, spreading fire and increasing risk of burns or injuries. Use water spray/fog for cooling. Even if material is water soluble, it may not be practical to extinguish fire by water dilution. Notify authorities if liquid enters sewers or other public waters.

HAZARDOUS COMBUSTION PRODUCTS: carbon dioxide; carbon monoxide; Cobalt fumes

SECTION - 6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP PROCEDURES Shut off ignition sources; smoking, flames or other sources of ignition must not be permitted in the area. Small Spills: Take up with sand or other noncombustible absorbent material and put into properly labeled containers for disposal. Large Spills: Dike ahead of liquid spill area to minimize migration and vapor generation. Ventilate the area. Get professional help from outside contractors, the fire department or your trained spill brigade.

HEALTH CONSIDERATIONS AND PROTECTIVE EQUIPMENT Information on the selection and use of personal protective equipment is found in Section 8 of this MSDS. Personal protective equipment needs Must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; material spilled, quantity, the area in which it occurred and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits and consider that the evaporation of volatile solvents can lead to the displacement of air creating an environment that can cause asphyxiation.

SECTION - 7. HANDLING AND STORAGE

HANDLING Avoid contact with material, avoid breathing vapors, use only in a well ventilated area, use bonding and grounding when transferring this material.

STORAGE Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions. Keep container(s) closed if possible.

SECTION- 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep exposure to airborne contaminants below the TLV, PEL, or other recommended exposure limit and/or maintain operator comfort.

RESPIRATORY PROTECTION If air monitoring indicates airborne concentrations at or above the limits, or symptoms of inhalation over-exposure occur, a respiratory protection program may be required. Engineering controls to reduce the exposure below acceptable limits are usually preferable to a respirator program.

EYE PROTECTION Chemically resistant safety glasses with side shields must be worn when handling this product. Further eye protection such as chemical splash goggles and/or face shield must be worn when the possibility exists for eye contact due to splashing or spraying liquid or airborne particles. Contact lenses should not be worn. An eye wash station should be available.

SKIN PROTECTION Prevent skin contact by wearing gloves and other protective equipment. Inspect gloves for chemical break-through and replace if detected. Clean protective equipment thoroughly after each use. Do not remove from workplace. An emergency shower in the area is recommended. Appropriate gloves to be used for these products that are mixtures have not been determined. Glove type(s) for ingredients present at 10% or more (if known) are: Nitrile

SECTION- 9. PHYSICAL AND CHEMICAL PROPERTIES PRODUCT

	RTO12 WHITE	RTO12 BLACK
APPEARANCE:	Liquid	Liquid
COLOR:	white	black
ODOR:	Characteristic	Characteristic
SPECIFIC GRAVITY	(g/ml): 1.50	(g/ml): 1.08
PERCENT VOLATILE:	9	15
VOC CONTENT(lb/gl):	Not determined	Not determined
VAPOR PRESSURE (Pa):	Not determined	Not determined
BOILING PT OR RANGE(F):	ND	ND
pH:	NA	NA
VISCOSITY:	ND	ND
VAPOR DENSITY:	Heavier than air	Heavier than air
FREEZING POINT(F):	ND	ND
EVAPORATION RATE:	0.01-0.1 (n-Butyl acetate= 1)	0.01-0.1 (n-Butyl acetate= 1)

SECTION- 9.1 EXPOSURE, PHYSICAL AND CHEMICAL PROPERTIES FOR COMPONENTS

COMPONENT	ACGIH		OSHA	
	TWA	CEIL	TWA	CEIL
133-86-4 (BLACK ONLY)	3.5mg/m3	NE	3.5mg/m3	NE
61789-51-3	NE	NE	NE	NE
27253-31-2	NE	NE	NE	NE
112-34-5	NE	NE	NE	NE
124-17-4	NE	NE	NE	NE
96-29-7	NE	NE	NE	NE
61789-51-3	NE	NE	NE	NE
27253-31-2	NE	NE	NE	NE
7631-86-9	10 mg/m3	NE	6 MPPCF	NE
8052-41-3	100 ppm	NE	500 ppm	NE
67700-70-3	NE	NE	NE	NE

COMPONENT CAS NUMBER	SPECIFIC GRAVITY	EVAP RATE N-BUTYL ACETATE=1	WATER SOLUBILITY	VAPOR PRESSURE
			Weight %	mmHg at F
1333-86-4 (BLACK ONLY)	1.800	ND	Negligible	ND
61789-51-3	0.900	ND	Negligible;	ND
27253-31-2	1.000	ND	ND	ND
112-34-5	0.954	0.01-0.1	Complete;	10.02
124-17-4	0.981	0.01-0.1	Minimal;	1-.04 @ 68
96-29-7	0.920	0.5-2	ND	2 mm Hg
61789-51-3	0.900	ND	Negligible;	ND
27253-31-2	1.000	ND	ND	ND
7631-86-9	1.000	ND	ND	ND
8052-41-3	0.790	0.01-0.1	Negligible;	5 @ 25 C
67700-70-3	1.000	ND	ND	ND

SECTION- 10. STABILITY AND REACTIVITY

STABILITY Stable under normal conditions.

CONDITIONS TO AVOID Heat, sparks, open flame, other ignition sources, oxidizing conditions, and elevated temperatures.

INCOMPATIBILITY Strong acids; acids; caustics (bases); -strong oxidizing agents;

HAZARDOUS DECOMPOSITION PRODUCTS carbon dioxide; carbon monoxide; Cobalt fumes

SECTION- 11. TOXICOLOGICAL INFORMATION

Carbon black:

Carcinogenicity

NTP: Not classified OSHA: Not classified ACGIH: Not classifiable as a human carcinogen (A4) IARC: Carbon black is possibly carcinogenic to humans (Group 2B) Evaluation: There is inadequate evidence in humans for the carcinogenicity of carbon black. There is sufficient evidence in experimental animals for the carcinogenicity of carbon black. There is sufficient evidence in experimental animals for the carcinogenicity of carbon black extracts. overall evaluation: Carbon black is possibly carcinogenic to humans (Group 2B) [IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer,1972-PRESENT. (Multivolume work).,p. 65 247 (1996)]. Summary of Data Reported and Evaluation: Exposure data: In the late 1980s and early 1990s, more extensive studies in western Europe and the United States have found ... even lower exposures may occur among some workers in industries using carbon black, such as rubber, printing ink and paint manufacture, and exposures to carbon black in the use of rubber, printing ink or paint are negligible. [IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer,1972-PRESENT. VOL.: 65 (1996) (p. 149)].

LD50 (oral, rat): >8000 mg/kg

LC50 (inhalation, rat): 27000 mg/m³ (27 mg/L) (1-hour exposure).

CHRONIC INHALATION: Hamsters, mice, guinea pigs,, rabbits and monkeys exposed to carbon blacks (channel black or furnace black) at concentrations of 85 mg/m³ (channel black) and 56 mg/m³ (furnace black) intermittently for periods up to 3000 hours (13,000 hours for monkeys) showed no significant effects other than accumulation of dusts in the lungs. The channel black contained extremely low levels of benzene-extractable material and the furnace black contained 0.28% extractable material.

SUBCHRONIC TOXICITY: Rat, inhalation, duration 90 days Target organ: lungs Effect: inflammation, hyperplasia, fibrosis NOEL =1.1 mg/m³

Cobalt: IARC has classified cobalt and cobalt compounds as Group 2B carcinogens. Group 2B carcinogens are possibly carcinogenic to humans.

Diethylene glycol monobutyl ether:

LD50 (oral, rat): 6,560 mg/kg.

LD50 (oral, rat): 5,660 mg/kg.

LD50 (oral, guinea pig): 2,000 mg/kg

LD50 (oral, rabbit): 2,200 mg/kg.

Ethylene glycol monoethyl ether acetate:

LD50 (rat, male, oral): 3,900 ml/kg.

LD50 (rat, female, oral): 2,900 mg/kg.

LD50 (guinea pig, oral): 1,910 mg/kg.

LCLO (rat, inhalation): 1,500 ppm; 8 hours duration of exposure.

Methyl ethyl ketoxime:

Oral LD50 rat: 930 mg/kg

SECTION- 12. ECOLOGICAL INFORMATION

Diethylene glycol monobutyl ether:

LC50 Goldfish 2700 mg/l/24 hr.

Aqueous screening test data indicate that biodegradation may be an important removal mechanism of diethylene glycol monobutyl ether from aerobic soil and water. In the atmosphere, diethylene glycol monobutyl ether is expected to exist almost entirely in the vapor phase and reactions with photochemically produced hydroxyl radicals should be important (estimated half-life of 11 hrs)

SECTION- 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state, local or provincial regulations.

SECTION-14. TRANSPORT INFORMATION, DOT and IATA:

DOT & IATA: NOT RESTRICTED

SECTION-:15. REGULATORY INFORMATION

Those ingredients appearing on the following list that do not appear in Section 2 are present at <0.1% for carcinogens, <1% for other hazardous substances, or are not considered hazardous in this product.

UNITED STATES OF AMERICA

FEDERAL REGULATIONS

CERCLA: The following components have CERCLA reportable quantities:

CASRN	DESCRIPTION	CERCLA RQ	WEIGHT%
None			

RCRA: The following components are subject to RCRA land disposal restrictions:

CASRN DESCRIPTION

None

SARA TITLE III

SECTION 302 Extremely Hazardous Substances (EHS)

CASRN DESCRIPTION

None

SECTION 311/312 Community Right to Know

CASRN DESCRIPTION

None

SARA HAZARD CATEGORY INFORMATION

FIRE: YES

SUDDEN RELEASE OF PRESSURE: NO

REACTIVE: NO

IMMEDIATE (ACUTE) HEALTH HAZARD: YES

DELAYED (CHRONIC) HEALTH HAZARD: YES

SECTION 313 Toxic Chemical Release Inventory Reporting (TRI)

CASRN DESCRIPTION

None

TSCA

SECTION 8(b) Inventory: All chemicals in this product appear in the inventory or are exempt from the listing requirements.

SECTION 12(b) Export: The following chemicals are subject to export reporting

CASRN	DESCRIPTION
124-17-4	2-(2-BUTOXYETHOXY)ETHYL ACETATE
112-34-5	DIETHYLENE GLYCOL MONOBUTYL ETHER
96-29-7	METHYL ETHYL KETOXIME

STATE REGULATIONS

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65)

The following chemical(s) in this product are known to the State of California to cause cancer:

CASRN	DESCRIPTION	WGT%
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None RTO12 WHITE

1333-86-4 (RT012 BLACK)	CARBON BLACK	7-13%
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The following chemical(s) in this product are known to the State of California to be hazards to reproductive health: WGT%

None

SECTION-15. REGULATORY INFORMATION (CONT)

MASSACHUSETTS Right to Know Law

CASRN	DESCRIPTION	WGT%
None RTO12 WHITE		
1333-86-4 (RTO12 BLACK)	CARBON BLACK	7-13%
7631-86-9	AMORPHOUS SILICA 1-5	
8052-41-3	STODDARD SOLVENT 0.5-1.5	

NEW JERSEY Right to Know Law

CASRN	DESCRIPTION	%
1333-86-4 (RTO12 BLACK)	CARBON BLACK	7-13%
112-34-5	DIETHYLENE GLYCOL MONOBUTYL ETHER	0.5-1.5
61789-51-3	COBALT NAPHTHENATE	0.1-1
7631-86-9	SILICA, AMORPHOUS 1-5	
8052-41-3	STODDARD SOLVENT 0.5-1.5	

PENNSYLVANIA Right to Know Law

CASRN	DESCRIPTION	
1333-86-4 (RTO12 BLACK)	CARBON BLACK	7-13%
112-34-5	DIETHYLENE GLYCOL MONOBUTYL ETHER	0.5-1.5
7631-86-9	SILICA, AMORPHOUS	1-5
8052-41-3	STODDARD SOLVENT	0.5-1.5

16. OTHER INFORMATION

Diethylene glycol monobutyl ether: Supplier recommended exposure limit - 35 ppm (TWA)

Note: A CAS number in the form TSXXXX-XX-X is a trade secret. NA= Not applicable ND= Not determined TS= Trade secret

MSDS prepared by Richard C. Berry

This information is offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is made. The recommended industrial hygiene and safe handling practices are believed to be generally applicable, however each user must review the recommendations and determine the suitability for their intended use.

REASON FOR ISSUE: MSDS form revision

PREPARED BY: RICHARD C BERRY

APPROVAL DATE: 01/23/2006

SUPERSEDES DATE: 01/16/06

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of the material described in this MSDS. Information contained herein is given in good faith and believed to be true and accurate, but all statements or suggestions are made without warranty, expressed implied, regarding the accuracy of the information, the hazards connected with the use of the material, or results to be obtained from the use thereof. All of the ingredients in this product that are considered to present a health hazard as defined in Appendix A of the OSHA "Hazard Communication" standard (29CFR 1910.1200) are listed in Section II. All of the information given, including ingredient identification, CAS Number, and quantity, has been provided in order to meet the objective of the "Hazard Communication" standard.

See us on the Web at www.allenavionics.com Email: sales@allenavionics.com