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Fax: (815) 968-9731
www.gcelectronics.com

MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Type: Solvent Release Adhesive
Product Name: **GC BOND**
Part Number(s): 10-4302-B

Emergency Contact: Chemtrec
Phone: (800) 424-9300

HMIS RATINGS		NFPA RATINGS	
Health:	2	Health:	2
Flammability:	3	Flammability:	3
Physical Hazards:	0	Instability:	0
Specific Hazard:	--	Specific Hazard:	--

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, tan

WARNING! FLAMMABLE LIQUID AND VAPOR. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

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Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Eye contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8).

Aggravated Medical Condition

Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions), blood-forming system, liver, kidney, central nervous system, gastrointestinal tract, heart, nervous system, Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias., Individuals with pre-existing heart disorders may be more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways). Cough, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), low body temperature, lowered blood pressure, abdominal pain, respiratory depression (slowing of the breathing rate), difficulty in breathing, irregular heartbeat, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), lung edema (fluid buildup in the lung tissue), convulsions, respiratory failure, coma.

Target Organs

Based on animal studies, exposure to methyl ethyl ketone (MEK) increases the onset of peripheral neuropathy caused by exposure to methyl butyl ketone (MBK), and/or n-hexane, and/or ethyl butylketone.

MEK alone has not been shown to cause peripheral neuropathy. Chronic phenol poisoning is characterized by digestive disorders such as anorexia and weight loss, and by nervous disorders, with headache, fainting, vertigo, and mental disturbances. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: nervous system effects, blood abnormalities, kidney damage, liver damage, heart damage and lung damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: central nervous system effects.

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Supersedes Date: 11/29/2012

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Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Carcinogenicity

Human studies have associated nasopharyngeal cancers (area of the upper throat behind the nose) and possibly other respiratory cancers (nasal cavity and sinuses) with formaldehyde exposure in the workplace. Although the evidence is not conclusive, some studies suggest an association between workplace formaldehyde exposure and leukemia. In studies in rats, inhalation of formaldehyde has caused nasal tumors, while ingestion in drinking water has caused leukemia and gastrointestinal tract tumors. Formaldehyde is listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) and the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

This material (or a component) may be harmful to the human fetus based on positive test results with laboratory animals.

Other information

Formaldehyde has been positive in tests which measure permanent changes to the DNA in germ cells of mammals. Changes in these cells can be passed on to future generations. The relevance of this finding to human health is uncertain.

SECTION 3. COMPOSITION / INFORMATION OF INGREDIENTS

Hazardous Components	CAS-No.	Concentration
METHYL ETHYL KETONE	78-93-3	>=70-<80%
CALCIUM CARBONATE	471-34-1	>=1.5-<5%
PHENOL	108-95-2	>=1.5-<5%
FORMALDEHYDE	50-00-0	>=1-<1.5%
		>=0.1-<0.5%

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Product Name: GC BOND

SECTION 4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Do not induce vomiting. Phenol concentrations greater than 1.5% produce irritation and greater than 5% are corrosive; vomiting can cause further damage to the mouth and throat. Do not dilute the swallowed material, since this may enhance its absorption. Seek immediate medical attention. If possible, do not leave the individual unattended. Vomiting and diarrhea may occur spontaneously.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. If symptoms persist, medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: Ingestion of large amounts or other significant exposure to this material (or a component) may cause alkalosis. Excessive calcium intake may cause gastrointestinal symptoms, hypertension, hypercalcemia, kidney stones, and may inhibit absorption of iron, zinc, and possibly other trace elements. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. Pulmonary edema may be delayed.

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Product Name: GC BOND

SECTION 4. FIRST AID MEASURES (CONTINUED)

Treatment: Phenol adsorbs to activated charcoal, and it may be preferable to ipecac-induced emesis because seizures or coma may onset rapidly and because of the corrosive effects of phenol. A usual activated charcoal dose in adults is 30-100 g and in children is 15-30 g. Activated charcoal should be administered with, or followed by, a cathartic. If endoscopy is planned, charcoal may obscure visualization of affected areas. Gastric lavage may be indicated if it is performed soon after ingestion or in patients who are comatose or at risk of seizures. Monitor for seizures, metabolic acidosis and ventricular dysrhythmias.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products

Acid vapors, Calcium Oxide, Carbon Dioxide and Carbon Monoxide

Precautions for fire-fighting

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquid Classification

Flammable Liquid Class IB

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Ensure adequate ventilation. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.

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MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 6. ACCIDENTAL RELEASE MEASURES (CONTINUED)

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Other information

Comply with all applicable federal, state, and local regulations. Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

Storage

Store in a cool, dry, ventilated area, away from incompatible substances.
Keep containers closed when not in use.

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MSDS Number: 322
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MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Guidelines

METHYL ETHYL KETONE		**78-93-3**	
ACGIH	time weighted average	200 ppm	
ACGIH	Short term exposure limit	300 ppm	
NIOSH	Recommended exposure limit (REL):	200 ppm	
NIOSH	Recommended exposure limit (REL):	590 mg/m3	
NIOSH	Short term exposure limit	300 ppm	
NIOSH	Short term exposure limit	885 mg/m3	
OSHA Z1	Permissible exposure limit	200 ppm	
OSHA Z1	Permissible exposure limit	590 mg/m3	
CALCIUM CARBONATE		**471-34-1**	
NIOSH	Recommended exposure limit (REL):	10 mg/m3	Total
NIOSH	Recommended exposure limit (REL):	5 mg/m3	Respirable.
OSHA Z1	Permissible exposure limit	5 mg/m3	Respirable fraction.
OSHA Z1	Permissible exposure limit	15 mg/m3	Total dust.
PHENOL		**108-95-2**	
ACGIH	time weighted average	5 ppm	
NIOSH	Recommended exposure limit (REL):	5 ppm	
NIOSH	Recommended exposure limit (REL):	19 mg/m3	
NIOSH	Ceiling Limit Value and Time Period (if specified):	15.6 ppm	
NIOSH	Ceiling Limit Value and Time Period (if specified):	60 mg/m3	
OSHA Z1	Permissible exposure limit	5 ppm	
OSHA Z1	Permissible exposure limit	19 mg/m3	

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Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

FORMALDEHYDE		50-00-0
ACGIH	Ceiling Limit Value:	0.3 ppm
NIOSH	Recommended exposure limit (REL):	0.016 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.1 ppm
OSHA	time weighted average	0.75 ppm
OSHA	Short term exposure limit	2 ppm
OSHA	OSHA Action level:	0.5 ppm

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist. Maintain eye wash station near work area.

Skin and body protection

Wear resistant gloves such as: Natural Rubber. Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use. Discard gloves that show tears, pinholes, or signs of wear.

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION (CONTINUED)

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Color	tan
Boiling point/boiling range	176°F / 80°C @760.00 mm Hg
Flash point	23°F / -5°C Tag Open Cup
Evaporation rate	1 Ethyl Ether
Lower explosion limit/Upper explosion limit	2.0% (V) / 12.0% (V)
Vapor pressure	71.000 mm HG @ 68.00°F / 20.00 °C
Relative vapor density	2.5 AIR=1
Density	0.8629 g/cm3 @ 77.00 °F / 25.00 °C 7.18 lb/gal @ 77.00 °F / 25.00 °C

SECTION 10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Heat, flames and sparks.

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 10. STABILITY AND REACTIVITY (CONTINUED)

Incompatible products

1,3-butadiene, ammonium salts, aluminum, aluminum salts, amines, copper, copper alloys, halogenated hydrocarbons, halogens; iron, lead, magnesium, strong alkalis, strong oxidizing agents, strong mineral acids and zinc

Hazardous decomposition products

Acid Vapors, Calcium Oxide, Carbon Dioxide and Carbon Monoxide

Hazardous reactions

Formaldehyde reacts with peroxides, phenol. Product will not undergo hazardous polymerization.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

METHYL ETHYL KETONE	: LD 50 Rat: 2,300 - 3,500 mg/kg
CALCIUM CARBONATE	: LD 50 Rat: 6,450 mg/kg
PHENOL	: LD 50 Rat: 317 mg/kg
FORMALDEHYDE	: LD50 Rat: 800 mg/kg Male
	:LD 50 Mouse: 42 mg/kg

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Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

Acute inhalation toxicity

METHYL ETHYL KETONE	: LC 50 Rat: 11,700 mg/l; 4 h :
CALCIUM CARBONATE	no data available
PHENOL	: LC 50 Rat: 316 mg/m3; 4 h

Acute dermal toxicity

METHYL ETHYL KETONE	: LD 50 Rabbit: > 5 g/kg
CALCIUM CARBONATE	: no data available
PHENOL	: LD 50 Rabbit: 850 mg/kg
FORMALDEHYDE	: LD 50 Rabbit: 288 mg/kg

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability : no data available

Bioaccumulation : no data available

FORMALDEHYDE : no data available

Ecotoxicity effects

METHYL ETHYL KETONE	LC 50: 3,130-3,320 mg/l Exposure Time: 96 h Species: Fathead minnow (Pimephales promelas) Test Type: Flow-Through Test
CALCIUM CARBONATE	: 96 h LC 50 Gambusia affinis (Mosquito fish): > 56,000.00 mg/l Method: Static; Mortality
PHENOL	: 96 h LC 50 Rainbow trout, Donaldson trout (Oncorhynchus mykiss): 7.50 - 14.00 mg/l Method: Static; Mortality 96 h LC 50 Danio rerio (zebra fish): 27.80 mg/l Method: Static; Mortality
FORMALDEHYDE	: 96 h LC 50 Danio rerio (zebra fish): 41.00 mg/l Method: Static; Mortality

Toxicity to daphnia and other aquatic invertebrates.

METHYL ETHYL KETONE	: 48 h static test EC 50 Water flea (Daphnia magna): 4,025.00 - 6,440.00 mg/l Intoxication
CALCIUM CARBONATE	: no data available
PHENOL	: 48 h EC 50 Water flea (Daphnia magna): 4.24 - 10.70 mg/l Method: Static Intoxication

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 12. ECOLOGICAL INFORMATION (CONTINUED)

Toxicity to daphnia and other aquatic invertebrates.

FORMALDEHYDE : 48 h EC 50 Water flea (Daphnia magna): 29.00 mg/l
Method: Static Intoxication

Toxicity to bacteria : no data available

Toxicity to Algae **: no data available**

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Destroy by liquid incineration in accordance with applicable regulations. Dispose of in accordance with all applicable local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
U.S. DOT - ROAD					
UN 1133	Adhesives	3		II	
U.S. DOT - RAIL					
UN 1133	Adhesives	3		II	
U.S. DOT - INLAND WATERWAYS					
UN 1133	Adhesives	3		II	
TRANSPORT CANADA - ROAD					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - RAIL					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - INLAND WATERWAYS					
UN 1133	ADHESIVES	3		II	

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MSDS Number: 322
Revision Date: 03/14/2014
Supersedes Date: 11/29/2012

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 14. TRANSPORT INFORMATION (CONTINUED)

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1133	ADHESIVES	3	II

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1133	Adhesives	3	II

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1133	Adhesives	3	II

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1133	ADHESIVOS	3	II

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.	FORMALDEHYDE QUARTZ (SiO2) VINYLCYCLOHEXENE, 4- BENZENE ACRYLONITRILE 1,3, BUTADIENE
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	VINYLCYCLOHEXENE, 4- 1,3, BUTADIENE

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MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA Hazard Classification
Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313 Component(s)

PHENOL	1.08 %
FORMALDEHYDE	0.13 %

New Jersey RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

Pennsylvania RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	n (Negative listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)

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Product Name: GC BOND

SECTION 15. REGULATORY INFORMATION (CONTINUED)

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302) 6511 lbs

Reportable quantity-Components

METHYL ETHLY KETONE 78-93-3 5000 lbs

	HMIS	NFPA
Health	3*	3
Flammability	3	3
Physical hazards	2	
Instability		2
Specific Hazard	--	--

SECTION 16. OTHER INFORMATION

GC Electronics believes that the information contained herein is accurate and reliable as of the date of this material safety data sheet, but no representation guarantee or warranty, express or implied, is made as to the accuracy, reliability or completeness of the information. Persons receiving information are encouraged to make their own determination as to the information's suitability and completeness for their particular application. NO INFORMATION CONTAINED HEREIN CONSTITUTES A PRODUCT WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANT ABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY GC ELECTRONICS.

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MSDS Number: 315
Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Type: Solvent Release Adhesive
Product Name: **GC BOND**
Part Number(s): **10-4302-A** ~~**10-4308-A**~~ being Discontinued, changing to 10-4302-B

Emergency Contact: **Chemtrec**
Phone: **(800) 424-9300**

HMIS RATINGS		NFPA RATINGS	
Health:	3	Health:	3
Flammability:	3	Flammability:	3
Physical Hazards:	2	Instability:	2
Specific Hazard:	--	Specific Hazard:	--

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, tan

WARNING! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS. MAY BE HARMFUL IF SWALLOWED. MAY BE HARMFUL IF INHALED. MAY CAUSE ALLERGIC RESPIRATORY REACTION.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

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MSDS Number: 315
Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Eye contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin contact

Can cause skin irritation. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.). May cause allergic respiratory reaction.

Aggravated Medical Condition

Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions), blood-forming system, liver, kidney, central nervous system, gastrointestinal tract, heart, nervous system, Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias., Individuals with pre-existing heart disorders may be more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

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Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: abnormal coloring of the skin, allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects), stomach or intestinal upset (nausea, vomiting, diarrhea), thirst, irritation (nose, throat, airways), cough, lung irritation, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, sleep disturbances, low body temperature, lowered blood pressure, abdominal pain, effects on heart rate, respiratory depression (slowing of the breathing rate), difficulty in breathing, irregular heartbeat, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), high blood sugar, pneumonia, allergic reaction (causes narrowing of the air passages of the lungs, sweating, flushing, hives, rapid heart rate, and lowered blood pressure), lung edema (fluid buildup in the lung tissue), shock, convulsions, respiratory failure, coma.

Target Organs

This material (or a component) shortens the time of onset or worsens the liver and kidney damage induced by other chemicals. Based on animal studies, exposure to methyl ethyl ketone (MEK) increases the onset of peripheral neuropathy caused by exposure to methyl butyl ketone (MBK), and/or n-hexane, and/or ethyl butylketone. MEK alone has not been shown to cause peripheral neuropathy. Chronic phenol poisoning is characterized by digestive disorders such as anorexia and weight loss, and by nervous disorders, with headache, fainting, vertigo, and mental disturbances. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: nervous system effects, blood abnormalities, kidney damage, liver damage, heart damage and lung damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: central nervous system effects, effects on lung function.

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Supersedes Date: 05/01/2009

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Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

Carcinogenicity

Human studies have associated nasopharyngeal cancers (area of the upper throat behind the nose) and possibly other respiratory cancers (nasal cavity and sinuses) with formaldehyde exposure in the workplace. Although the evidence is not conclusive, some studies suggest an association between workplace formaldehyde exposure and leukemia. In studies in rats, inhalation of formaldehyde has caused nasal tumors, while ingestion in drinking water has caused leukemia and gastrointestinal tract tumors. Formaldehyde is listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) and the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

This material (or a component) may be harmful to the human fetus based on positive test results with laboratory animals.

Other information

Formaldehyde has been positive in tests which measure permanent changes to the DNA in germ cells of mammals. Changes in these cells can be passed on to future generations. The relevance of this finding to human health is uncertain.

SECTION 3. COMPOSITION / INFORMATION OF INGREDIENTS

Hazardous Components	CAS-No.	Concentration
ACETONE	67-64-1	>=70-<80%
METHYL ETHYL KETONE	78-93-3	>=1.5-<5%
CALCIUM CARBONATE	471-34-1	>=1.5-<5%
PHENOL	108-95-2	>=1-<1.5%
ORTHO CRESOL	95-48-7	>=0.1-<0.5%
FORMALDEHYDE	50-00-0	>=0.1-<0.5%

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Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Do not induce vomiting. Phenol concentrations greater than 1.5% produce irritation and greater than 5% are corrosive; vomiting can cause further damage to the mouth and throat. Do not dilute the swallowed material, since this may enhance its absorption. Seek immediate medical attention. If possible, do not leave the individual unattended. Vomiting and diarrhea may occur spontaneously.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: This material (or a component) has produced hyperglycemia and ketosis following substantial ingestion. Ingestion of large amounts or other significant exposure to this material (or a component) may cause alkalosis. Excessive calcium intake may cause gastrointestinal symptoms, hypertension, hypercalcemia, kidney stones, and may inhibit absorption of iron, zinc, and possibly other trace elements. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. Pulmonary edema may be delayed. Formaldehyde ingestion can cause a reduction in body temperature, jaundice, acidosis, and hematuria; and may also cause albuminuria and anuria. Metabolic acidosis and hyperlactatemia may occur as a result of acute inhalation exposure.

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Product Name: GC BOND

SECTION 4. FIRST AID MEASURES (CONTINUED)

Treatment: Phenol adsorbs to activated charcoal, and it may be preferable to ipecac-induced emesis because seizures or coma may onset rapidly and because of the corrosive effects of phenol. A usual activated charcoal dose in adults is 30-100 g and in children is 15-30 g. Activated charcoal should be administered with, or followed by, a cathartic. If endoscopy is planned, charcoal may obscure visualization of affected areas. Gastric lavage may be indicated if it is performed soon after ingestion or in patients who are comatose or at risk of seizures. Monitor for seizures, metabolic acidosis and ventricular dysrhythmias.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products

Carbon dioxide and carbon monoxide, calcium oxide, acid vapors

Precautions for fire-fighting

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Ensure adequate ventilation. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.

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MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 6. ACCIDENTAL RELEASE MEASURES (CONTINUED)

Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Other information

Comply with all applicable federal, state, and local regulations. Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

Storage

Store in a cool, dry, ventilated area, away from incompatible substances.

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MSDS Number: 315
Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Guidelines

ACETONE		**67-64-1**	
ACGIH	time weighted average	500 ppm	
ACGIH	Short term exposure limit	750 ppm	
NIOSH	Recommended exposure limit (REL):	250 ppm	
NIOSH	Recommended exposure limit (REL):	590 mg/m3	
OSHA Z1	Permissible exposure limit	1,000 ppm	
OSHA Z1	Permissible exposure limit	2,400 mg/m3	
METHYL ETHYL KETONE		**78-93-3**	
ACGIH	time weighted average	200 ppm	
ACGIH	Short term exposure limit	300 ppm	
NIOSH	Recommended exposure limit (REL):	200 ppm	
NIOSH	Recommended exposure limit (REL):	590 mg/m3	
NIOSH	Short term exposure limit	300 ppm	
NIOSH	Short term exposure limit	885 mg/m3	
OSHA Z1	Permissible exposure limit	200 ppm	
OSHA Z1	Permissible exposure limit	590 mg/m3	
CALCIUM CARBONATE		**471-34-1**	
NIOSH	Recommended exposure limit (REL):	10 mg/m3	Total
NIOSH	Recommended exposure limit (REL):	5 mg/m3	Respirable.
OSHA Z1	Permissible exposure limit	5 mg/m3	Respirable fraction.
OSHA Z1	Permissible exposure limit	15 mg/m3	Total dust.
PHENOL		**108-95-2**	
ACGIH	time weighted average	5 ppm	
NIOSH	Recommended exposure limit (REL):	5 ppm	
NIOSH	Recommended exposure limit (REL):	19 mg/m3	
NIOSH	Ceiling Limit Value and Time Period (if specified):	15.6 ppm	
NIOSH	Ceiling Limit Value and Time Period (if specified):	60 mg/m3	
OSHA Z1	Permissible exposure limit	5 ppm	
OSHA Z1	Permissible exposure limit	19 mg/m3	

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MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

FORMALDEHYDE		50-00-0
ACGIH	Ceiling Limit Value:	0.3 ppm
NIOSH	Recommended exposure limit (REL):	0.016 ppm
NIOSH	Recommended exposure limit (REL):	0.016 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.1 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.1 ppm
OSHA	time weighted average	0.75 ppm
OSHA	Short term exposure limit	2 ppm
OSHA	OSHA Action level:	0.5 ppm

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist. Maintain eye wash station near work area.

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

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Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION (CONTINUED)

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	no data available
Color	tan
Odor	no data available
Boiling point/boiling range	no data available
Melting point/range	no data available
Sublimation point	no data available
pH	no data available
Flash point	-4 °F / -20 °C Seta closed cup
Ignition temperature	no data available
Evaporation rate	1 Ethyl Ether
Lower explosion limit/Upper explosion limit	no data available
Particle size	no data available
Vapor pressure	no data available
Relative vapor density	no data available
Density	0.8577 g/cm3 @ 77.00 °F / 25.00 °C 7.1534 lb/gal @ 77.00 °F / 25.00 °C
Bulk density	No data
Water solubility	no data available
Solubility(ies)	no data available
Partition coefficient: n-octanol/water	no data available
log Pow	no data available
Autoignition temperature	no data available

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Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

Viscosity, dynamic	600 mPa.s
Viscosity, kinematic	no data available
Solids in Solution	no data available
Decomposition temperature	no data available
Burning number	no data available
Dust explosion constant	no data available
Minimum ignition energy	no data available

SECTION 10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Excessive heat, flames and sparks.

Incompatible products

1,3-butadiene, acids, alkalis, ammonium salts, aluminum, aluminum salts, amines, ammonia, copper, copper alloys, halogenated hydrocarbons, halogens; iron, lead, magnesium, peroxides, reducing agents, strong oxidizing agents, zinc

Hazardous decomposition products

Carbon dioxide and carbon monoxide, calcium oxide, acid vapors

Hazardous reactions

Formaldehyde reacts with peroxides, phenol, strong acids, amines and strong oxidizing agents. Formaldehyde reacts violently with nitrogen dioxide, nitromethane, perchloric acid, perchloric acid-aniline mixtures, or peroxyformic acid to yield explosive compounds.It reacts with hydrochloric acid or to organic chlorides to form the carcinogen, bis(chloromethyl)ether.

Thermal decomposition

No data

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MSDS Number: 315
Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

ACETONE	:	LD 50 Rat: 5,800 mg/kg
METHYL ETHYL KETONE	:	LD 50 Rat: 2,300 - 3,500 mg/kg
CALCIUM CARBONATE	:	LD 50 Rat: 6,450 mg/kg
PHENOL	:	LD 50 Rat: 317 mg/kg
ORTHO CRESOL	:	LD 50 Rat: 121 mg/kg
FORMALDEHYDE	:	LD 50 Rat: 100 mg/kg LD 50 Mouse: 42 mg/kg LD 50 Rat: 2,020 mg/kg

Acute inhalation toxicity

ACETONE	:	LC 50 Rat: > 16000 ppm; 4 h
METHYL ETHYL KETONE	:	LC 50 Rat: 11,700 mg/l; 4 h
CALCIUM CARBONATE	:	no data available
PHENOL	:	LC 50 Rat: 316 mg/m3; 4 h
ORTHO CRESOL	:	LC 50 Rat: (>) 1,220 mg/m3; 1 h LC 50 Mouse: 0.179 mg/l; 2 h
FORMALDEHYDE	:	LC 50 Rat: 203 mg/m3; 2 h

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Product Name: GC BOND

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

Acute dermal toxicity

ACETONE	:	LD 50 Rabbit: > 20,000 mg/kg
METHYL ETHYL KETONE	:	LD 50 Rabbit: > 5 g/kg
CALCIUM CARBONATE	:	no data available
PHENOL	:	LD 50 Rabbit: 850 mg/kg
ORTHO CRESOL	:	LD 50 Rabbit: 890 mg/kg
FORMALDEHYDE	:	LD 50 Rabbit: 288 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Biodegradability

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Bioaccumulation

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

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MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 12. ECOLOGICAL INFORMATION (CONTINUED)

Ecotoxicity effects

Toxicity to fish

ACETONE	:	96 h static test LC 50 Rainbow trout, Donaldson trout (Oncorhynchus mykiss): 4,740.00 - 6,330.00 mg/l 96 h static test LC 50 Bluegill (Lepomis macrochirus): 8,300.00 mg/l 96 h flow-through test LC 50 Fathead minnow (Pimephales promelas): 8,733.00 - 9,482.00 mg/l
METHYL ETHYL KETONE	:	96 h flow-through test LC 50 Fathead minnow (Pimephales promelas): 3,130.00 - 3,320.00 mg/l ; Mortality
CALCIUM CARBONATE	:	96 h LC 50 Gambusia affinis (Mosquito fish): > 56,000.00 mg/l Method: Static; Mortality
PHENOL	:	96 h LC 50 Rainbow trout, Donaldson trout (Oncorhynchus mykiss): 7.50 - 14.00 mg/l Method: Static; Mortality 96 h LC 50 Danio rerio (zebra fish): 27.80 mg/l Method: Static; Mortality
ORTHO CRESOL	:	96 h LC 50 Fathead minnow (Pimephales promelas): 9.72 - 15.92 mg/l Method: Static; Mortality 96 h LC 50 Rainbow trout, Donaldson trout (Oncorhynchus mykiss): 8.40 mg/l Method: Flow through; Mortality
FORMALDEHYDE	:	96 h LC 50 Danio rerio (zebra fish): 41.00 mg/l Method: Static; Mortality

Toxicity to daphnia and other aquatic invertebrates.

ACETONE	:	no data available
METHYL ETHYL KETONE	:	48 h static test EC 50 Water flea (Daphnia magna): 4,025.00 - 6,440.00 mg/l Intoxication
CALCIUM CARBONATE	:	no data available

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Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 12. ECOLOGICAL INFORMATION (CONTINUED)

Ecotoxicity effects

Toxicity to daphnia and other aquatic invertebrates:

PHENOL	:	48 h EC 50 Water flea (Daphnia magna): 4.24 - 10.70 mg/l Method: Static Intoxication
ORTHO CRESOL	:	48 h EC 50 Water flea (Daphnia magna): 15.80 mg/l Method: Static Intoxication
FORMALDEHYDE	:	48 h EC 50 Water flea (Daphnia magna): 29.00 mg/l Method: Static Intoxication

Toxicity to algae

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	72 h Duckweed (Lemna minor): 750.00 mg/l Method: Static Mortality
FORMALDEHYDE	:	no data available

Toxicity to bacteria

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

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Product Name: GC BOND

SECTION 12. ECOLOGICAL INFORMATION (CONTINUED)

Ecotoxicity effects

Biochemical Oxygen Demand (BOD)

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Chemical Oxygen Demand (COD)

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Additional ecological information

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

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Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

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Product Name: GC BOND

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Destroy by liquid incineration in accordance with applicable regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

SECTION 14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
U.S. DOT - ROAD					
UN 1133	Adhesives	3		II	
Label: Flammable Liquid Description: Nitrite Rubber, Resin Adhesive Shipping Information For Less Than One Gallon: DOT Shipping Name: Consumer Commodity DOT Hazard Class: ORM-D					
U.S. DOT - RAIL					
UN 1133	Adhesives	3		II	
U.S. DOT - INLAND WATERWAYS					
UN 1133	Adhesives	3		II	
TRANSPORT CANADA - ROAD					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - RAIL					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - INLAND WATERWAYS					
UN 1133	ADHESIVES	3		II	
INTERNATIONAL MARITIME DANGEROUS GOODS					
UN 1133	ADHESIVES	3		II	
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO					
UN 1133	Adhesives	3		II	

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MSDS Number: 315
Revision Date:05/25/2012
Supersedes Date: 05/01/2009

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC BOND

SECTION 14. TRANSPORT INFORMATION (CONTINUED)

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1133	Adhesives	3	II

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1133	ADHESIVOS	3	II

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.	FORMALDEHYDE QUARTZ (SiO2) VINYLCYCLOHEXENE, 4- BENZENE ACRYLONITRILE 1,3, BUTADIENE
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	VINYLCYCLOHEXENE, 4- BENZENE 1,3, BUTADIENE

SARA Hazard Classification

Fire Hazard
Acute Health Hazard
Chronic Health Hazard

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA 313 Component(s)

PHENOL	1.02 %
FORMALDEHYDE	0.12 %

New Jersey RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

Pennsylvania RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	n (Negative listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302)	6967 lbs

Reportable quantity-Components

ACETONE	67-64-1	5000 lbs

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Product Name: GC BOND

SECTION 16. OTHER INFORMATION

GC Electronics believes that the information contained herein is accurate and reliable as of the date of this material safety data sheet, but no representation guarantee or warranty, express or implied, is made as to the accuracy, reliability or completeness of the information. Persons receiving information are encouraged to make their own determination as to the information's suitability and completeness for their particular application.
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Discontinued

Changed to 10-4302-A
MSDS 315

Product Name: GC Bond
MSDS Number: 114
Revision Date: 5/01/09
Supersedes Date: 4/13/06

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: Solvent Release Adhesive
Product Name: **GC Bond**
Part Number(s): **10-4302**
10-4308

Emergency Contact: **Chemtrec**
Phone: **(800) 424-9300**

Section 1 – Identification of Product

Common Name: GC Bond
Product Name: General Purpose Industrial Adhesive
General or Generic ID – Nitrile Rubber/Resin in Solvent

NFPA Rating:			
Health:	1	Least	0
Flammability:	3	Slight	1
Reactivity:	0	Moderate	2
		High	3
		Extreme	4
		Gloves, Safety Glasses	B

Section 2 – Hazardous Ingredients

Ingredient(s)	CAS Number	% (by Weight)
Methyl Ethyl Ketone	78-93-3	79.0 – 79.0
Nitrile Rubber	Trade Secret	9.0 – 13.0
Alkylphenolic Resin	Trade Secret	4.0 – 8.0
Calcium Carbonate	471-34-1	1.0 – 5.0
Formaldehyde	50-00-0	0.1 – 0.1

Section 3 – Physical Data

Boiling Point (for product):	176.0°F (80.0°C) @ 760 mmHg
Vapor Pressure (for product):	71.000 mmHg @ 68.00 F
Specific Vapor Density:	2.500 @ AIR = 1
Specific Gravity:	.862 @ 77.00 F
Liquid Density:	7.180 lbs/gal @ 77.00 F
	.862 kg/1 @ 25.00 C
Percent Volatiles:	78.0% – 82.0%
Evaporation Rate:	SLOWER THAN ETHYL ETHER
Appearance:	No data
State:	LIQUID
Physical Form:	No data
Color:	TAN COLORED LIQUID
Odor:	No data
pH:	Not applicable

Section 4 – Fire and Explosion Hazard Data

Flash Point:	23.0°F (-5.0 C) TOC
Explosive Limit (for product):	Lower 2.0% Upper 12.0%
Autoignition Temperature:	No data
Hazardous Products of Combustion:	May form: carbon dioxide and carbon monoxide, hydrogen cyanide, nitrogen compounds, phenols, various hydrocarbons.
Fire and Explosion Hazards:	Material is volatile and readily gives off vapors which may travel along the ground or may be removed by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Extinguishing Media:	Regular foam, water fog, carbon dioxide, dry chemical.
Fire Fighting Instruction:	No data

Section 5 – Health Hazard Data

Potential Health Effects

Eye:	May cause mild eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes .
Skin:	Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Additional symptoms of skin contact may include: allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects)
Swallowing:	Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.
Inhalation:	Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (see section 8).
Symptoms of Exposure:	Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), stomach or intestinal upset (nausea, vomiting, diarrhea).

Target Organ Effects: Based on animal studies, exposure to methyl ethyl ketone (MEK) increases the onset of peripheral neuropathy caused by exposure to methyl butyl ketone (MBK), and/or n-hexane, and/or ethyl butyl ketone. MEK alone has not been shown to cause peripheral neuropathy. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible liver effects, mild, reversible kidney effects.

Developmental Information: This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. The relevance of these findings to humans is uncertain.

Cancer Information: Human studies have associated nasopharyhgeal cancers (area of the upper throat behind the nose) and possibly other respiratory cancers (nasal cavity and sinuses) with the formaldehyde exposure in the workplace. Although the evidence is not conclusive, some studies suggest an association between workplace formaldehyde exposure and leukemia. In studies in rats, inhalation of formaldehyde has caused nasal tumors, while ingestion in drinking water has caused leukemia and gastrointestinal tract tumors. Formaldehyde is listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) and the Occupational Safety and Health Administration (OSHA).

Other Health Effects: No data.

Primary Routes of Entry: Inhalation, skin contact, eye contact and ingestion.

First Aid Measures:

Eyes: If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

Skin: Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Swallowing: Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation: If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Note to Physicians: This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (see Potential Health Effects in section 5 – Swallowing) when deciding whether to induce vomiting. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions).

Section 6 – Reactivity Data

Hazardous Polymerization:	Product will not undergo hazardous polymerization.
Hazardous Decomposition:	May form: carbon dioxide and carbon monoxide, hydrogen cyanide, nitrogen compounds, phenols, various hydrocarbons.
Chemical Stability:	Stable
Incompatibility:	Avoid contact with: strong oxidizing agents.

Section 7 – Spill or Leak Procedure

Small Spill:	Eliminate all sources of ignition such as flares, flames (including pilot lights), and electrical sparks. Absorb liquid on vermiculite, floor absorbent or other absorbent material.
Large Spill:	Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Section 8 – Special Protection Information

Eye Protection:	Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.
Skin Protection:	Wear resistant gloves such as: natural rubber, to prevent repeated or prolonged skin contact, wear impervious clothing and boots.
Respiratory Protection:	If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), 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.
Engineering Controls:	Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).
Exposure Guidelines:	Component Methyl Ethyl Ketone (78-93-3) OSHA PEL 200.00ppm -TWA OSHA VPEL 200.000 ppm – TWA OSHA VPEL 300.000 ppm – STEL ACGIH TLV 200.000 ppm – TWA ACGIH TLV 300.000 ppm – STEL
Nitrile Rubber:	No exposure limits established.

Alkylphenolic Resin:	No exposure limits established.
Calcium Carbonate (471-34-1):	No exposure limits established. OSHA PEL 0.750ppm TWA OSHA PEL 2.000ppm STEL
Formaldehyde (50-00-0):	OSHA VPEL 0.750 ppm – TWA OSHA VPEL 2.000 ppm – STEL ACGIH TLV 0.300 ppm – Ceiling

Section 9 – Special Precautions

Handling:	Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77. .
Waste Management Information:	Destroy by liquid incineration in accordance with applicable regulations.

Section 10 – Regulatory Information

US Federal Regulations

TSCA (Toxic Substances Control Act) Status: TSCA (United States) The intentional ingredients of this product are listed.

CERCLA RQ – 40 CFR 302.4(a):

Component	RQ (lbs)
METHYL ETHYL KETONE	5000
FORMALDEHYDE	100

CERCLA RQ – 40 CFR 302.4(b): Materials without a “listed” RQ may be reportable as an “unlisted hazardous substance”. See 40 CFR 302.5 (b)

SARA 302 Components – 40 CFR 355 Appendix A:

Section 302 Component(s)	TPQ (lbs)	RQ (lbs)
FORMALDEHYDE	500	100

Section 311/312 Hazard Class – 40 CFR 370.2:
X Immediate X Delayed X Fire
__ Reactive __ Sudden __ Release of Pressure

SARA 313 Components – 40 CFR 372.65:

Section 313 Component(s)	CAS Number	%
METHYL ETHYL KETONE	78-93-3	79.42
FORMALDEHYDE	50-00-0	.10

OSHA Process Safety Management – 29 CFR 1910:

PSM Component(s)	Condition	TQ (lbs)
FORMALDEHYDE		1000

EPA Accidental Release Prevention – 40 CFR 68:

RMP Component(s)	Condition	TQ (lbs)
FORMALDEHYDE (SOLUTION)		15000

International Regulations:
Inventory Status
DSL (Canada) The intentional ingredients of this product are listed.

ECL (South Korea) The intentional ingredients of this product are listed.
EIWECS (Europe) The intentional ingredients of this product are listed.
IECSC (China) The intentional ingredients of this product are listed.

State and Local Regulations:

California Proposition 65
The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.
FORMALDEHYDE (GAS)
1, 3-BUTADIENE
ACRYLONITRILE

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1988: This product contains the following substance(s) known to the State of California to cause reproductive harm.
1,3-BUTADIENE
FORMALDEHYDE 50-00-0

New Jersey RTK Label Information: METHYL ETHYL KETONE 78-93-3
Pennsylvania RTK Label Information: 2-BUTANONE 78-93-3

Section 11-Other Information

Available only in 2 oz or 8 oz bottles.

DOT Shipping Name:	Adhesives
Hazard Class:	3
NA or UN#:	UN1133
Packing Group:	II
NOS Component:	None

RQ (Reportable Quantity): 49 CFR 172.101

Product Quantity (lbs)	Component
6295	METHYL ETHYL KETONE
6296	

The transport information may vary with the container and mode of shipment.

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Product Name: GC Bond
MSDS Number: 114
Revision Date: 5/01/09
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