

MATERIAL SAFETY DATA SHEET

SECTION 1 - SOURCE/IDENTITY/USE INFORMATION

MANUFACTURER

SUPPLIER

GC AMERICA INC.

3737 West 127th St.

Alsip, Illinois, 60803

Telephone: 708-597-0900

Hours: Mon.- Fri. 8:00 am. - 5:00 pm. C.S.T.

Transportation Emergency Telephone No. 800-424-9300

COMMON NAME: FUJI ORTHO LIQUID

Chemical Name: N.A.

PRODUCT USE: Self-cured glass ionomer for bonding of orthodontic appliances. (Liquid component)

The following information is provided with regard to the toxicity and hazards of the pure components present in this portion of the unmixed powder/liquid system.

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT AND C.A.S.	EXPOSURE LIMITS	LD50/LC50	%
Polyacrylic acid (not listed)	TWA=10ppm (ACGIH)	LD50 = 2500mg/kg (oral rat) LC50 = N.E.	20-25%
2-Hydroxyethyl methacrylate (not listed)	N.E.	LD50=5888mg/kg (oral rat) LC50=N.E.	35-40%
2,2,4, Trimethyl hexamethylene dicarbonate (not listed)	N.E.	N.E.	5-10%
Triethylene glycol dimethacrylate (not listed)	N.E.	N.E.	5-10%

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

BOILING POINT: 101°C SPECIFIC GRAVITY (H₂O = 1): 1.18
 VAPOR PRESSURE: N.E. MELTING POINT: 13°C
 VAPOR DENSITY: N.E. EVAPORATION RATE: N.E.
 SOLUBILITY IN WATER: N.E. ODOR THRESHOLD: N.E.
 COEFFICIENT OF OIL/WATER DISTRIBUTION: N.E.

APPEARANCE AND ODOR: Colorless, slightly viscous and odorless liquid

SECTION 5 - REACTIVITY DATA

STABILITY: STABLE: X UNSTABLE:
POLYMERIZATION: WILL NOT OCCUR: X WILL OCCUR:

CONDITIONS TO AVOID: High heat

INCOMPATIBILITY (MATERIALS TO AVOID): Alkaline, will inactivate product.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: N.E.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION

	YES	NO	N.E.	N.A.	NTP	IARC	OSHA	OTHER
MUTAGENIC AFFECTS:		X						
TERATOGENIC AFFECTS:		X						
REPRODUCTIVE TOXIN:		X						
CARCINOGENICITY:		X						
SENSITIZER:		X						

ROUTES OF ENTRY: INHALATION _____ SKIN X INGESTION X

HEALTH HAZARD: (ACUTE AND CHRONIC): Acidic solution (pH =1.90), care should be taken to avoid contact with skin or eyes.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: N.E.

CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N.E.

EMERGENCY FIRST AID PROCEDURES:

INGESTION: Do not induce vomiting. Give large volumes of water. Seek medical attention.

SKIN: Wash with soap and water. If irritation develops, seek medical attention.

EYES: Flush with water for 15 minutes. If irritation develops, seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

IN CASE OF RELEASE OR SPILL:
Neutralize with diluted hydroxides.
Dilute with water.

WASTE DISPOSAL METHOD:
Dilute with water. Flush into drain with large volumes of water.

STORAGE, HANDLING, AND SPECIAL PRECAUTIONS:
Store in a cool dry place in tightly closed container.

SECTION 8 - CONTROL MEASURES

RESPIRATORY PROTECTION: None required

VENTILATION: None required

LOCAL EXHAUST: N.A.

MECHANICAL: N.E.

SPECIAL: N.E.

OTHER: N.E.

PROTECTIVE GLOVES: Latex gloves are recommended

EYE PROTECTION: Goggles or full-face shield

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Do not spill on clothing.
Eyewash station

WORK/HYGIENIC PRACTICE: N.E.

SECTION 9- PREPARATION INFORMATION

This data is supplied to comply with OSHA Hazard Communication Standard 29 CFR 1910,1200 and W.H.M.I.S. CPR

PREPARED BY: T. Joritz
Director Regulatory Affairs

Date: 1 November 97

N.A. = NOT APPLICABLE

N.E. = NOT ESTABLISHED

The information herein is given in good faith but no warranty expressed or implied is made.

		NFPA	
FIRE 0	TOXICITY 1	REACTIVITY 1	SPECIAL ACID

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: N.E.

FLAMMABLE LIMITS: N.A.

EXTINGUISHING MEDIA: Alcohol foam, dry chemical

SPECIAL FIRE FIGHTING PROCEDURES: Full protective clothing and self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: N.E.

HAZARDOUS COMBUSTION PRODUCTS: Emits Acrid smoke when heated beyond boiling point.

SECTION 5 - REACTIVITY DATA

STABILITY:

STABLE: X

UNSTABLE:

POLYMERIZATION:

WILL NOT OCCUR: X

WILL OCCUR:

CONDITIONS TO AVOID: High heat; oxidizers

INCOMPATIBILITY (MATERIALS TO AVOID): Alkali will inactivate product

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: N.E.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION

	YES	NO	N.E.	N.A.	NTP	IARC	OSHA	OTHER
MUTAGENIC AFFECTS:		X						
TERATOGENIC AFFECTS:		X						
REPRODUCTIVE TOXIN:		X						
CARCINOGENICITY:		X						
SENSITIZER:		X						

ROUTES OF ENTRY: INHALATION X SKIN X INGESTION X

HEALTH HAZARD: (ACUTE AND CHRONIC): Mildly toxic by all routes. Acidic solution (pH=1.90), care should be taken to avoid contact with skin or eyes.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: N.E.

CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N.E.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION - continued

EMERGENCY FIRST AID PROCEDURES:

INGESTION: Do not induce vomiting - give large volumes of water.
Seek medical attention.

SKIN: Wash with soap and water.
If irritation develops seek medical attention.

EYES: Flush with water for 15 minutes.
If irritation develops seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

IN CASE OF RELEASE OR SPILL: Neutralize with diluted hydroxide.

WASTE DISPOSAL METHOD: Dilute with water and flush into drain with large volumes of water.

STORAGE, HANDLING, AND SPECIAL PRECAUTIONS: Store in a cool dry place in tightly closed container.

SECTION 8 - CONTROL MEASURES

RESPIRATORY PROTECTION: None required

VENTILATION: None required LOCAL EXHAUST: N.A. MECHANICAL: N.A.
 SPECIAL: N.E. OTHER: N.A.

PROTECTIVE GLOVES: Latex gloves are recommended

EYE PROTECTION: Goggles or full face shield

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Do not spill on clothing.
Eyewash station

WORK/HYGIENIC PRACTICE: N.E.

SECTION 9 - PREPARATION INFORMATION

This data is supplied to comply with OSHA Hazard Communication Standard 29 CFR 1910,1200 and W.H.M.I.S. CPR

PREPARED BY: T. Joritz
Director Regulatory Affairs

Date: 1 November 97

N.A. = NOT APPLICABLE
N.E. = NOT ESTABLISHED

The information herein is given in good faith but no warranty expressed or implied is made.

FIRE 0 TOXICITY 2 NFPA
 REACTIVITY 0 SPECIAL ACID

MATERIAL SAFETY DATA SHEET

SECTION 1 - SOURCE/IDENTITY/USE INFORMATION

MANUFACTURER SUPPLIER
 GC AMERICA INC.
 3737 West 127th St.
 Alsip, Illinois, 60803
 Telephone: 708-597-0900
 Hours: Mon.- Fri. 8:00 am. - 5:00 pm. C.S.T.
 Transportation Emergency Telephone No. 800-424-9300

COMMON NAME: FUJI ORTHO POWDER

Chemical Name: N.A.

PRODUCT USE: Self-cured glass ionomer for bonding of orthodontic appliances. (Powder component).

The following information is provided with regard to the toxicity and hazards of the pure components present in this portion of the unmixed powder/liquid system.

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT AND C.A.S.	EXPOSURE LIMITS	LD50/LC50	%
Alumino-silicate glass (Not listed)	TLV=10mg/m ³ PEL=15mg/m ³ (ACGIH)	N.E.	90-100%

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

BOILING POINT: N.E. SPECIFIC GRAVITY (H₂O = 1): 2.56
 VAPOR PRESSURE: N.E. MELTING POINT: >1,350°C
 VAPOR DENSITY: N.E. EVAPORATION RATE: N.E.
 SOLUBILITY IN WATER: Insoluble ODOR THRESHOLD: N.E.
 COEFFICIENT OF OIL/WATER DISTRIBUTION: N.E.

APPEARANCE AND ODOR: Very fine white powder

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: Not flammable FLAMMABLE LIMITS: N.A.

EXTINGUISHING MEDIA: Material is not combustible. Use extinguishing media appropriate to the surrounding area.

SECTION 4 - FIRE AND EXPLOSION DATA - continued

SPECIAL FIRE FIGHTING PROCEDURES: N.A.

UNUSUAL FIRE AND EXPLOSION HAZARDS: N.E.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide

SECTION 5 - REACTIVITY DATA

STABILITY:	STABLE: X	UNSTABLE:
POLYMERIZATION:	WILL NOT OCCUR: X	WILL OCCUR:

CONDITIONS TO AVOID: Avoid high temperatures and humidity

INCOMPATIBILITY (MATERIALS TO AVOID): Contains silica glass. Avoid contact with hydrofluoric acid. Contact with acids liberates hydrogen fluoride gas which is toxic and corrosive.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: At elevated temperatures various fluoride compounds will be liberated, including toxic hydrogen fluoride and sodium potassium fluoride.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION

	YES	NO	N.E.	N.A.	NTP	IARC	OSHA	OTHER
MUTAGENIC AFFECTS:		X						
TERATOGENIC AFFECTS:		X						
REPRODUCTIVE TOXIN:		X						
CARCINOGENICITY:	X						X (GROUP 2A)	
SENSITIZER:		X						

ROUTES OF ENTRY: INHALATION X SKIN___INGESTION

HEALTH HAZARD: (ACUTE AND CHRONIC): Contains silica glass, which is considered a hazard by inhalation. IARC has classified it as a probable carcinogenic for humans. Dusts of silica glass is also a known cause of silicosis, a non-cancerous lung disease.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Irritation and soreness in throat and nose.

CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: May aggravate preexisting upper respiratory and lung disease.

SECTION 6 - HEALTH HAZARD DATA and FIRST AID INFORMATION - continued

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove to fresh air, drink water to clear throat and blow nose to evacuate dust.

INGESTION: Ingestion may require medical assistance.

SKIN: Wash with soap and water.

EYES: Flush with large quantities of water. If irritation develops or persists seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

IN CASE OF RELEASE OR SPILL: Avoid generating dust while sweeping. If an excessive amount of dust is generated use a filter equipped vacuum and MSHA/NIOSH approved mask.

WASTE DISPOSAL METHOD: In accordance with local, state and federal regulations.

STORAGE, HANDLING, AND SPECIAL PRECAUTIONS: Store at normal room temperatures and humidity.

SECTION 8 - CONTROL MEASURES

RESPIRATORY PROTECTION: Minimize exposure to dust in accordance with good hygiene practice. If needed, use MSHA-NIOSH approved respirator for dusts, mists and fumes.

VENTILATION:	LOCAL EXHAUST: Yes	MECHANICAL: Yes
	SPECIAL: N.A.	OTHER: N.A.

PROTECTIVE GLOVES: Disposable vinyl gloves recommended.

EYE PROTECTION: Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Eyewash station

WORK/HYGIENIC PRACTICE: Follow safe hygiene practices.

SECTION 9 - PREPARATION INFORMATION

This data is supplied to comply with OSHA Hazard Communication Standard 29 CFR 1910,1200 and W.H.M.I.S. CPR

PREPARED BY: T. Joritz
Director Regulatory Affairs

Date: 1 November 97

N.A. = NOT APPLICABLE
N.E. = NOT ESTABLISHED

The information herein is given in good faith but no warranty expressed or implied is made.

FIRE	0	TOXICITY	1	NFPA REACTIVITY	0	SPECIAL	-
------	---	----------	---	--------------------	---	---------	---

MATERIAL SAFETY DATA SHEET

SECTION 1 - SOURCE/IDENTITY/USE INFORMATION

MANUFACTURER	SUPPLIER
GC AMERICA INC.	
3737 West 127th St.	
Alsip, Illinois, 60803	
Telephone: 708-597-0900	
Hours: Mon.- Fri. 8:00 am. - 5:00 pm. C.S.T.	
Transportation Emergency Telephone No. 800-424-9300	

COMMON NAME: GC ORTHO CONDITIONER

Chemical Name: N.A.

PRODUCT USE: Conditioning Agent

The following information is provided with regard to the toxicity and hazards of the pure components present in this product.

SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT AND C.A.S.	EXPOSURE LIMITS	LD50/LC50	%
Polyacrylic acid (not listed)	TWA=10 ppm (ACGIH)	LD50=2500mg/kg (oral rat) LC50=N.E.	8-12%

SECTION 3 - PHYSICAL/CHEMICAL PROPERTIES

BOILING POINT: 101°C	SPECIFIC GRAVITY (H ₂ O=1): 1.18
VAPOR PRESSURE: N.E.	MELTING POINT: 13°C
VAPOR DENSITY: N.E.	EVAPORATION RATE: N.E.
SOLUBILITY IN WATER: N.E.	ODOR THRESHOLD: N.E.
COEFFICIENT OF OIL/WATER DISTRIBUTION: N.E.	

APPEARANCE AND ODOR: Blue, slightly viscous and odorless liquid

SECTION 4 - FIRE AND EXPLOSION DATA

FLASH POINT: Not flammable FLAMMABLE LIMITS: N.E.

EXTINGUISHING MEDIA: Alcohol foam

SPECIAL FIRE FIGHTING PROCEDURES: Full protective clothing and self-contained breathing apparatus

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS COMBUSTION PRODUCTS: Emits acrid smoke when heated beyond boiling point