



FOR ANY EMERGENCY, CALL 24HOURS/ 7 DAYS:	1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC(R):	1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS

PRODUCT NAME: **QZ 3289 ADHESION CONCENTRATE**

1. PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: 07-30-2002
SUPERCEDES: 07-10-2001

MSDS NO: 01242-0003 - 850948
SYNONYMS: None
CHEMICAL FAMILY: Organosilane in aqueous solvent blend
DESCRIPTION / USE: Polyimide adhesion promoter
FORMULA: Not applicable/Mixture

Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204

2. COMPOSITION / INFORMATION ON INGREDIENTS

CAS or CHEMICAL NAME	CAS #	% Range
Ethanol	64-17-5	90 - 95
Organosilane compound	919-30-2	0.5 - 2

3. HAZARDS IDENTIFICATION

OSHA Hazard Classification: flammable, eye irritant, skin irritant, respiratory irritant, central nervous system depressant, liver toxin, reproductive toxin

Routes of Entry: Inhalation, skin, eyes, ingestion
Chemical Interactions: Potentiates the hepatotoxic effects of haloalkanes such as carbon tetrachloride and chloroform.
Medical Conditions Aggravated: Dermatitis may be aggravated following exposure., Pre-existing liver diseases

Human Threshold Response Data

Odor Threshold:
Ethanol 5.0 ppm
Irritation Threshold: Not established

Hazardous Materials Identification System/National Fire Protection Association Classifications

<u>Hazard Ratings:</u>	<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
HMIS	2*	3	0
NFPA	Not established		

Immediate (Acute) Health Effects

Inhalation Toxicity: Not expected to be toxic by inhalation. Inhalation of high concentrations may result in central nervous system (CNS) effects such as dizziness, weakness, fatigue, nausea, headache, and lack of coordination.

Inhalation Irritation: High concentrations may be slightly irritating to the eyes, nose, throat, and lungs.

Skin Contact: Skin contact may cause moderate irritation consisting of transient redness and swelling. This irritant effect would not be expected to result in permanent damage.

Skin Absorption: No significant adverse effects to health would be expected to occur from dermal contact.

Eye Contact Contact may cause moderate irritation consisting of transient redness, swelling, and mucous membrane discharge to the conjunctiva. No corneal involvement or visual impairment is expected.

Ingestion Irritation: Ingestion may cause irritation of the gastrointestinal tract and gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.

Ingestion Toxicity: Not expected to be toxic by ingestion unless large amounts are swallowed.

Acute Target Organ Toxicity: Eyes, Skin, Respiratory Tract, Central nervous system

Prolonged (Chronic) Health Effects

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.

Reproductive and Developmental Toxicity: Industrial exposures kept at or below the occupational exposure standard are not expected to pose a reproductive or developmental toxicity hazard.

Inhalation: There are no known or reported effects from chronic exposure except for effects similar to those experienced from acute exposure. Can cause liver damage.

Skin Contact: Dermal contact may cause defatting of skin and/or dermatitis.

Skin Absorption: There are no known or reported effects from chronic exposure except for effects (if any) similar to those experienced from acute exposure.

Ingestion: Can cause liver damage.

Chronic Target Organ Toxicity: Skin, Liver

Supplemental Health Hazard Information: No additional health information available.

4. FIRST AID MEASURES

Inhalation: IF INHALED: Remove individual to fresh air. If respiratory irritation develops, call a physician.

Skin Contact: IF ON SKIN: Immediately flush skin with plenty of water for 15 minutes. If clothing comes in contact with the product, the clothing should be removed immediately and laundered before re-use. Call a physician.

Eyes: IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart. Call a physician immediately.

Ingestion: IF SWALLOWED: Immediately drink water to dilute. Consult a physician if symptoms develop. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA): Highly flammable.

Flammable Properties

Flash Point: 17 Deg. C. / 64 Deg. F. (Test Method: Tag Closed Cup)

Autoignition Temperature: No data

Upper Flammable/Explosive Limit, % in air: 19 %

Lower Flammable/Explosive Limit, % in air: 3.3 %

Fire/Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back.

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, dry chemical, or vaporizing liquid extinguishing agents. Water spray or fog may also be effective for extinguishing or to absorb heat and keep exposed material from being damaged by fire.

Fire Fighting Instructions: In case of fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing apparatus (SCBA). Use water to cool containers.

Hazardous Combustion Products: carbon monoxide, carbon dioxide, Oxides of nitrogen

6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, impervious gloves, hard hat, splash-proof goggles, impervious clothing, i.e., chemically impermeable suit, self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release: Hazardous concentrations in air may be found in local spill area and immediately downwind. Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

Water Release: This material is lighter than water. This material is miscible in water. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.

Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all contaminated water for disposal and/or treatment.

Additional Spill Information: Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor. Ground and bond containers when transferring material.

Storage: Store in a cool dry ventilated location, away from sources of ignition or other incompatible conditions and chemicals. Keep container(s) closed. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet.

Shelf Life Limitations: See label or certificate of analysis for shelf life if applicable.

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Local exhaust ventilation or other engineering controls are necessary when handling or using this product. Use explosion-proof ventilation equipment when handling this product.

Protective Equipment for Routine Use of Product

Respiratory Protection: Wear a NIOSH approved respirator if levels above the exposure limits are possible.

Respirator Type(s): A NIOSH approved air purifying respirator with organic vapor cartridge. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin: Wear impervious gloves to avoid skin contact. Follow good industrial hygiene practices.

Eyes: Use chemical goggles.

Protective Clothing Type: Butyl rubber

Exposure Limit Data

CHEMICAL NAME	CAS #	OSHA PEL / STEL	ACGIH LIMITS	AIHA WEEL
Ethyl alcohol (Ethanol) Ethanol	64-17-5	1000 ppm TWA; 1900 mg/m ³ TWA	1000 ppm TWA	Not Established

CHEMICAL NAME	NIOSH Immediately Dangerous to Life or Health:
Ethyl alcohol	3300 ppm IDLH (10 percent lower explosive limit)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: liquid

Color: colorless

Odor: mild characteristic

Molecular Weight: Not Applicable/Mixture

pH: (@ 25 Deg. C) Not applicable

Octanol/Water Coeff: No data

Solubility in Water: Miscible

Bulk Density:	0.8 g/cc
Specific Gravity:	Approximately 0.8 (water = 1)
Vapor Density:	1.6 (air =1)
Vapor Pressure:	(@ 25 Deg. C) No data
Evaporation Rate:	7.00 (n-Butyl acetate = 1)
Boiling Point:	79 Deg. C. 174 Deg. F.
Freezing Point:	No data
Volatiles, % by vol.:	99 %

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Stable under normal conditions. Static discharge may cause ignition at temperatures at or above the flash point.
Reactive Properties:	Flammable, Not sensitive to mechanical shock., Product is sensitive to electrical static discharge.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Temperatures above the flash point in combination with sparks, open flames, or other sources of ignition.
Chemical Incompatibility:	strong oxidizing agents, Inorganic acids
Hazardous Decomposition Products:	carbon dioxide, carbon monoxide, oxides of nitrogen, aldehydes
Decomposition Temperature:	No data
Product May Be Unstable At Temperatures Above:	15 Deg. C. 60 Deg. F.

11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology

Oral LD50 value:	
Ethanol	Rat Believed to be > 5 g/kg
Dermal LD50 value:	
Ethanol	Rabbit Believed to be > 2 g/kg
Inhalation LC50 value:	No data

Product Animal Toxicity:

Oral LD50 value:	Oral LD50: Rat Believed to be > 5 g/kg
Dermal LD50 value:	Dermal LD50 Rabbit Believed to be > 2 g/kg
Inhalation LC50 value:	No data
Skin Irritation:	This material is expected to be moderately irritating.
Eye Irritation:	This material is expected to be moderately irritating.

Reproductive and Developmental Toxicity:	Industrial exposures kept at or below occupational exposures standards should not pose a reproductive or developmental toxicity hazard.
--	---

Component Data:

Ethanol	This chemical has been tested in laboratory animals and developmental and/or teratogenic effects were seen following ingestion.
1-Propanamine, 3-(triethoxysilyl)-	This chemical is not known or reported to affect reproductive function or fetal development.

Mutagenicity:	Not known or reported to be mutagenic.
Component Data:	

Ethanol	This product has been tested for mutagenicity. Tests revealed both positive and negative results. Based on the weight of evidence, we judge this product NOT to be a mutagenic hazard.
Carcinogenicity:	This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.
Component Data: Ethanol	The International Agency for Research on Cancer (IARC) has classified this product or a component of this product as a Group 3 substance, Unclassifiable as to Its Carcinogenicity to Humans.

12. ECOLOGICAL INFORMATION

Ecological Toxicity Values:

Ethanol	Brine shrimp 48 hr. LC50: = 25.5 mg/l (nominal, static).
	Daphnia pulex 18 hr. LC50: = 12100 mg/l (nominal, static).
	Daphnia magna, 48 hr. EC50: > 10000 mg/l (nominal, static).
	Fathead minnow, 96 hr. LC50: = 14700 mg/l (nominal, static).
	96 hr. LC50: > 250 mg/l (nominal, static).
	Rainbow trout (Salmo gairdneri) 96 hr. LC50: = 13000 mg/l (nominal, static).
	Ceriodaphnia dubia 48 hr. LC50: = 8808 mg/l (nominal, static).
	Daphnia magna, 48 hr. LC50: = 9248 mg/l (nominal, static).

13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary:	Spent or discarded material may be a hazardous waste.
Potential US EPA Waste Codes:	D001
Disposal Methods:	As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by incineration.

Components subject to land ban restrictions: Ethyl alcohol (D001)

14. TRANSPORT INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT Description (49 CFR 172.101):

Land (U.S. DOT): ETHANOL SOLUTIONS 3 UN1170 PGII

Air (IATA/ICAO): SAME AS LAND

Water (IMO): Ethanol solutions, 3.2, UN1170, PGII

Flash Point: (C) 17

Hazard Label/Placard: (Primary) FLAMMABLE

Emergency Response Guide Number: 127

15. REGULATORY INFORMATION

UNITED STATES:

Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

Pesticide acceptance indication: US EPA Registration Number: Not applicable

Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311/312 (40 CFR 370.2):

Health: Acute
Chronic
Physical: Fire

Emergency Planning & Community Right to Know (40 CFR 355, App. A):

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

Not applicable

Reportable Quantity (40 CFR 302.4):

None listed

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components

No 313-listed chemicals in this product

Clean Air Act VOC Section 111

Ethanol

State Right-to-Know Regulations Status of Ingredients

Pennsylvania: Ethanol
New Jersey: Ethyl alcohol
Massachusetts: Ethyl alcohol

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 - Proposition 65: "WARNING: This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects or other reproductive harm."

CAS or CHEMICAL NAME CAS #

Ethyl alcohol 64-17-5 developmental toxicity (when in alcoholic beverages); initial date 10/1/87

16. OTHER INFORMATION

MSDS REVISION

Revised to meet the ANSI standard of 16 sections.

STATUS:

MAJOR REFERENCES:

- Nelson, B.K., et al., Teratological Assessment of Methanol and Ethanol at High Inhalation Levels in Rats, Fundamental and Applied Toxicology, Vol. 5, pp. 727-736, 1985.
- McCann, Joyce, et al., Detection of Carcinogens as Mutagens in the Salmonella/Microsome test: Assay of 300 Chemicals, Proc. Nat. Acad. Sci. USA, Vol. 72, No. 12, pp. 5135-5139, December 1975.
- Sittig, Marshall, Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed., Noyes Publications, Park Ridge, NJ, 1985.
- Randall, Carrie, L. and W.J. Taylor, Prenatal Ethanol Exposure in Mice: Teratogenic Effects. Teratology, Vol. 19, pp. 305-312, 1979.

Other references available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.