MATERIAL SAFETY DATA SHEET

Supplier: Johnsonite, Inc.
16910 Munn Road, Chagrin Falls, Ohio 44023

Product: 996 Part A Epoxy Adhesive

24-Hour Emergency Telephone - Chemtrec: (800-424-9300)

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: JOHNSONITE 996 Part A
CHEMICAL FAMILY: Epoxy Adhesive, Part A

SECTION 2. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

			EXPOSURE GUIDELINES		
				OSHA	
Chemical Name	% by Weight	CAS Number	ACGIH TLV	TLV-TWA	OSHA PEL
Polyurethane prepolymer	11-17	Proprietary	Not established	Not established	Not established
Diglycidyl bisphenol A resin	25-35	25085-99-8	Not established	Not established	Not established
Alkyl (C12-C14) glycidyl ether	5-9	68609-97-2	Not established	Not established	Not established

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes eye irritation. Can cause respiratory irritation. Can cause central nervous system depression. Can cause dermatitis.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: May cause severe irritation. May damage eyes.

SKIN CONTACT: Prolonged exposure may cause skin irritation May cause drying or flaking of skin. Skin absorption of material may cause systemic toxicity.

INGESTION: Ingestion may cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth and mucous membranes. Harmful or fatal if swallowed. Do not ingest.

INHALATION: Overexposure may cause severe respiratory tract irritation. Prolonged overexposure may cause central nervous system depression with narcotic effects (headaches, dizziness). Keep exposure below OSHA exposure limits.

SECTION 4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN: Wash with soap and water. Get medical attention if irritation develops or persists. Immediately remove contaminated clothing.

INGESTION: If swallowed, seek medical attention immediately.

INHALATION: Remove to fresh air. Restore breathing if necessary. Get medical attention. This material can cause lung damage.

DO NOT LEAVE VICTIM UNATTENDED.

SECTION 5. FIRE-FIGHTING MEASURES

OSHA FLAMMABILITY CLASS: IIIB
FLASHPOINT: >200°F, >93°C
LOWER EXPLOSIVE LIMIT: Not applicable
UPPER EXPLOSIVE LIMIT: Not applicable

GENERAL HAZARD: May release flammable mixtures when temperatures are at or above the flash point. Toxic gasses will form upon combustion. Closed containers may explode when exposed to extreme heat. Vapors are heavier than air and may travel a considerable distance.

FIRE FIGHTING EQUIPMENT: Respiratory and eye protection required for firefighting personnel. Full protective equipment and a self-contained breathing apparatus (SCBA) should be used in all indoor fires and any large outdoor fires.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, smoke and fumes, hydrocarbon fragments.

SECTION 6. ACCIDENTAL RELEASE MEASURES

GENERAL INSTRUCTIONS: Keep all sources of ignition and hot metal surfaces away from spill. Isolate the danger area and keep out unauthorized personnel. Stop spill if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see section 8). Prevent additional discharge of material. Notify the appropriate authorities immediately. Contain spilled liquid with sand, earth or other non-combustible inert absorbent material. Prevent run-off from entering storm sewers, ditches or waterways. Transfer absorbed waste material into properly identified drums. Treat waste material with same precautions as the adhesive.

Do not use solvent or flammable liquid to help clean up an accidental release.

Release to the environment may be reportable under environmental regulations.

SECTION 7. HANDLING AND STORAGE

HANDLING: Open container slowly to relieve any pressure. Do not enter confined spaces such as tanks without following proper entry procedures as described in OSHA regulations at 29 CFR 1910.146. Do not breathe vapors. The use of respiratory protection is recommended when airborne concentrations of vapor exceed exposure guidelines. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Wear appropriate protective gloves and clothing to prevent prolonged or repeated skin contact. Avoid contact with eyes.

STORAGE: Keep containers tightly closed. Use and store this material in a cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flames". Store only in approved containers. Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes.

EMPTY CONTAINERS: May contain liquid and vapor residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in accordance with governmental regulations.

Wash with soap and water before eating, drinking, smoking or using toilet facilities.

Consult NFPA and OSHA codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure guidelines. Protection provided by air purifying respirators is limited. Refer to respirator manufacturer's selection guide for appropriate respirator for conditions encountered. If in doubt, seek the advice of an industrial hygienist or safety professional for appropriate air purifying respiratory equipment.

Use positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection. When respiratory protection is used, a respiratory protection program meeting OSHA regulations at 29 CFR 1910.134 must be followed.

SKIN PROTECTION: The use of gloves impermeable to the specific material handled is advised to prevent prolonged or repeated skin contact. Where splashing is likely to occur, aprons impermeable to the specific material may be worn. Refer to the glove and protective clothing manufacturer's selection guide for appropriate material.

EYE PROTECTION: Approved chemical splash goggles should be worn to safeguard against potential eye contact, irritation or injury. Where splashing is likely to occur, hard hats and face shields may be used to provide additional protection. Eye wash facilities should be available in the work area.

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation to maintain exposure below TLV(s). The use of local exhaust ventilation is recommended. Provide mechanical ventilation of confined spaces. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure guidelines, additional ventilation or exhaust systems may be required

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Beige paste with low odor.
SPECIFIC GRAVITY: Approx 1.5 (68°F -20°C)
pH: Not applicable
BOILING POINT >425°F, >218°C
FREEZING POINT: 32°F, 0°C
SOLUBILITY IN WATER: Slightly Soluble
% SOLIDS (BY WEIGHT): >99%
% VOLATILE (BY WEIGHT): <1%
VAPOR PRESSURE (MM of MERCURY): <1mm of Hg
VAPOR DENSITY(air=1): Heavier than air.
EVAPORATIONRATE (BUTYL ACETATE = 1): Slower than butyl acetate
EVAPORATION RATE (ETHYL ETHER = 1): Slower than ethyl ether

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Keep away from flames and spark producing equipment. Not dangerously unstable. Avoid buildup of static electricity.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, strong reducing agents, acids, bases, or unstable chemicals, chloroform, nitric compounds, peroxides, sulfur dichloride, strong alkalis, amines, anhydrides, mercaptans, materials that react with epoxies.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition is unlikely to occur, but under fire or extreme heat conditions, carbon monoxide, carbon dioxide, smoke and fumes, and hydrocarbon fragments can be released.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL:	SKIN (Dermal LD50):	INGESTION (Oral LD50):
Polyurethane prepolymer	Not available	>5,000 mg/kg Oral/Rat
Diglycidyl bisphenol A resin	20,000 mg/kg (Rabbit)	>5,000 mg/kg Oral/Rat
Alkyl (C12-C14) glycidyl ether	>4,500 mg/kg (Rabbit)	19,200 mg/kg Oral/Rat

CHRONIC: None known.

CHRONIC / CARCINOGENICITY (CANCER CAUSING):

IARC: Not suspected as a human carcinogen.
OSHA: Not suspected as a human carcinogen
NTP Not suspected as a human carcinogen
OTHER: This product contains the following chemicals known to the state of California (Proposition 65) to cause cancer or reproductive toxicity: None known.

OTHER: None known

SECTION 12. ECOLOGICAL INFORMATION

No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

Incinerate at an EPA approved facility or dispose of in accordance with all federal, state/provincial and local regulations.

JOHNSONITE 996A is a hazardous waste if discarded (CFR., Vol 40, part 261, pgs. 51-114).

See Section 2, Page 1 of this MSDS for hazardous ingredients.

PROPER WASTE DISPOSAL IS THE RESPONSIBILITY OF THE OWNER OF THE WASTE!

Call Johnsonite Inc. if additional information is necessary.

SECTION 14. TRANSPORT INFORMATION

D.O.T./T/D/G/: Not Regulated

All packaged material must be labeled in accordance with DOT and OSHA standards.

SECTION 15. REGULATORY INFORMATION

OSHA: Not hazardous.

SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of TITLE III of Superfund Amendments and Reauthorization Act of 1986 and CFR Part 372: None known.

CALIFORNIA VOC (Volatile Organic Compound) COMPLIANCE

SCAQMD Rule 1168 VOC Compliant
SCAQMD Rule 443.1: Grams of VOC per Liter of Material < 12 gram/liter

WHMIS INFORMATION:
Class D, Division 2, Subdivision B - Toxic, Eye and skin irritant

SECTION 16. OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 1 Reactivity = 0
Personal Protective Equipment = Depends on application and ventilation
Hazard rating scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
TSCA = Components of this product are listed on the TSCA inventory

Johnsonite believes the statements, technical information and recommendations contained herein are reliable. They are given without warranty or guarantee of any kind, expressed or implied.

DATE ISSUED: January 3, 2012 CONTACT: Don Styka

MATERIAL SAFETY DATA SHEET

Supplier: Johnsonite, Inc.
16910 Munn Road, Chagrin Falls, Ohio 44023

Product: 996 Part B Epoxy Adhesive

24-Hour Emergency Telephone - Chemtrec: (800-424-9300)

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: JOHNSONITE 996 Part B
CHEMICAL FAMILY: Polyamide

SECTION 2. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

			EXPOSURE GUIDELINES		
				OSHA	
Chemical Name	% by Weight	CAS Number	ACGIH TLV	TLV-TWA	OSHA PEL
Polyamide resin	23-33	68410-23-1	Not established	Not established	Not established
Polyamine	6-12	Proprietary	Not established	Not established	Not established
Phenol	6-9	108-95-2	5 ppm	5 ppm	5 ppm
Tetraethylenepentamine	1-4	112-57-2	Not established	Not established	Not established
Propanol, oxybis -, dibenzoate	2-8	27138-31-4	Not established	Not established	Not established

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes eye burns or irritation. Can cause respiratory irritation. Can cause central nervous system depression. Can cause dermatitis.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: May cause severe irritation. May damage or burn eyes.

SKIN CONTACT: Prolonged exposure may cause skin irritation or burns May cause drying or flaking of skin. Skin absorption of material may cause systemic toxicity.

INGESTION: Ingestion may cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth and mucous membranes. Harmful or fatal if swallowed. Do not ingest.

INGESTION: Ingestion may cause severe injury to intestinal tract, liver, kidneys, stomach, throat, lungs, mouth and mucous membranes. Harmful or fatal if swallowed. Do not ingest.

INHALATION: Overexposure may cause severe respiratory tract irritation. Prolonged overexposure may cause central nervous system depression with narcotic effects (headaches, dizziness). Keep exposure below OSHA exposure limits.

SECTION 4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

SKIN: Wash with soap and water. Get medical attention if irritation develops or persists. Immediately remove contaminated clothing.

INGESTION: If swallowed, seek medical attention immediately.

INHALATION: Remove to fresh air. Restore breathing if necessary. Get medical attention. This material can cause lung damage.

DO NOT LEAVE VICTIM UNATTENDED.

SECTION 5. FIRE-FIGHTING MEASURES

OSHA FLAMMABILITY CLASS: IIIB
FLASHPOINT: >200°F, >93°C
LOWER EXPLOSIVE LIMIT: Not applicable

UPPER EXPLOSIVE LIMIT: Not applicable

GENERAL HAZARD: May release flammable mixtures when temperatures are at or above the flash point. Toxic gasses will form upon combustion. Closed containers may explode when exposed to extreme heat. Vapors are heavier than air and may travel a considerable distance.

FIRE FIGHTING EQUIPMENT: Respiratory and eye protection required for firefighting personnel. Full protective equipment and a self-contained breathing apparatus (SCBA) should be used in all indoor fires and any large outdoor fires.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, smoke and fumes, hydrocarbon fragments nitrogen oxides, amino compounds.

SECTION 6. ACCIDENTAL RELEASE MEASURES

GENERAL INSTRUCTIONS: Keep all sources of ignition and hot metal surfaces away from spill. Isolate the danger area and keep out unauthorized personnel. Stop spill if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see section 8). Prevent additional discharge of material. Notify the appropriate authorities immediately. Contain spilled liquid with sand, earth or other non-combustible inert absorbent material. Prevent run-off from entering storm sewers, ditches or waterways. Transfer absorbed waste material into properly identified drums. Treat waste material with same precautions as the adhesive.

Do not use solvent or flammable liquid to help clean up an accidental release.

Release to the environment may be reportable under environmental regulations.

SECTION 7. HANDLING AND STORAGE

HANDLING: Open container slowly to relieve any pressure. Do not enter confined spaces such as tanks without following proper entry procedures as described in OSHA regulations at 29 CFR 1910.146. Do not breathe vapors. The use of respiratory protection is recommended when airborne concentrations of vapor exceed exposure guidelines. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Wear appropriate protective gloves and clothing to prevent prolonged or repeated skin contact. Avoid contact with eyes.

STORAGE: Keep containers tightly closed. Use and store this material in a cool, dry, well-ventilated area away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area “No Smoking or Open Flames”. Store only in approved containers. Protect containers against physical damage. Indoor storage should meet OSHA standards and appropriate fire codes.

EMPTY CONTAINERS: May contain liquid and vapor residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in accordance with governmental regulations.

Wash with soap and water before eating, drinking, smoking or using toilet facilities.

Consult NFPA and OSHA codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure guidelines. Protection provided by air purifying respirators is limited. Refer to respirator manufacturer's selection guide for appropriate respirator for conditions encountered. If in doubt, seek the advice of an industrial hygienist or safety professional for appropriate air purifying respiratory equipment.

Use positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection. When respiratory protection is used, a respiratory protection program meeting OSHA regulations at 29 CFR 1910.134 must be followed.

SKIN PROTECTION: The use of gloves impermeable to the specific material handled is advised to prevent prolonged or repeated skin contact. Where splashing is likely to occur, aprons impermeable to the specific material may be worn. Refer to the glove and protective clothing manufacturer's selection guide for appropriate material.

EYE PROTECTION: Approved chemical splash goggles should be worn to safeguard against potential eye contact, irritation or injury. Where splashing is likely to occur, hard hats and face shields may be used to provide additional protection. Eye wash facilities should be available in the work area.

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation to maintain exposure below TLV(s). The use of local exhaust ventilation is recommended. Provide mechanical ventilation of confined spaces. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure guidelines, additional ventilation or exhaust systems may be required

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Beige paste with amine odor.
SPECIFIC GRAVITY: Approx 1.3 (68°F -20°C)
pH: Not applicable
BOILING POINT Approx. 350°F, >177°C
FREEZING POINT: 32°F, 0°C
SOLUBILITY IN WATER: Slightly Soluble
% SOLIDS (BY WEIGHT): >99%
% VOLATILE (BY WEIGHT): <1%
VAPOR PRESSURE (MM of MERCURY): <1mm of Hg
VAPOR DENSITY(air=1): Heavier than air.
EVAPORATIONRATE (BUTYL ACETATE = 1): Slower than butyl acetate
EVAPORATION RATE (ETHYL ETHER = 1): Slower than ethyl ether

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Keep away from flames and spark producing equipment. Not dangerously unstable. Avoid buildup of static electricity.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, strong reducing agents, acids, bases, or unstable chemicals, chloroform, peroxides, sulfur dichloride, strong alkalis, anhydrides, mercaptans, materials that react with amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition is unlikely to occur, but under fire or extreme heat conditions, carbon monoxide, carbon dioxide, smoke and fumes, hydrocarbon fragments, nitrogen oxides and amino compounds can be released.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL:	SKIN (Dermal LD50):	INGESTION (Oral LD50):
Polyamide resin	>2,000 mg/kg (Rabbit)	>1,230 mg/kg Oral/Rat
Polyamine	>699 mg/kg (Rabbit)	>1,457 mg/kg Oral/Rat
Phenol	850 mg/kg (Rabbit)	414 mg/kg Oral/Rat
Tetraethylenepentamine	>660 mg/kg (Rabbit)	2140 mg/kg Oral/Rat
Propanol, oxybis-, dibenzoate	>2,000 mg/kg (Rabbit)	5313 mg/kg Oral/Rat

CHRONIC: Liver and kidney damage. May cause corneal opacity. May cause central nervous system depression causing headaches, nausea, and dizziness.

CHRONIC / CARCINOGENICITY (CANCER CAUSING):

IARC:	Not suspected as a human carcinogen.
OSHA:	Not suspected as a human carcinogen
NTP	Not suspected as a human carcinogen
OTHER:	This product contains the following chemicals known to the state of California (Proposition 65) to cause cancer or reproductive toxicity: None known.
OTHER:	None known

SECTION 12. ECOLOGICAL INFORMATION

No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

Incinerate at an EPA approved facility or dispose of in accordance with all federal, state/provincial and local regulations.

JOHNSONITE 930B is a hazardous waste if discarded (CFR., Vol 40, part 261, pgs. 51-114).

See Section 2, Page 1 of this MSDS for hazardous ingredients.

PROPER WASTE DISPOSAL IS THE RESPONSIBILITY OF THE OWNER OF THE WASTE!

Call Johnsonite Inc. if additional information is necessary.

SECTION 14. TRANSPORT INFORMATION

D.O.T./T/D/G/: Not Regulated

All packaged material must be labeled in accordance with DOT and OSHA standards.

SECTION 15. REGULATORY INFORMATION

OSHA: Hazardous material by definition of hazard communication standard (29CFR 1910.1200).

SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of TITLE III of Superfund Amendments and Reauthorization Act of 1986 and CFR Part 372: None known.

CALIFORNIA VOC (Volatile Organic Compound) COMPLIANCE

SCAQMD Rule 1168 VOC Compliant
SCAQMD Rule 443.1: Grams of VOC per Liter of Material < 12 gram/liter

WHMIS INFORMATION:
Class E, Corrosive Material

SECTION 16. OTHER INFORMATION

HMIS RATINGS: Health = 2 Flammability = 1 Reactivity = 0
Personal Protective Equipment = Depends on application and ventilation.
Hazard rating scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
TSCA: = Components of this product are listed on the TSCAA inventory.

Johnsonite believes the statements, technical information and recommendations contained herein are reliable. They are given without warranty or guarantee of any kind, expressed or implied.

DATE ISSUED: January 3, 2012 CONTACT: Don Styka