ALCHEMY-SPETEC

Safety Data Sheet
SPETEC PUR F400

SECTION 1: Identification

Product identifier

Product name	SPETEC PUR F400

Recommended use of the chemical and restrictions on use

One component polyurethane injection resin designed to shut off water leaks.

Supplier's details

Name	Alchemy-Spetec
Address	4508 Bibb Blvd Tucker GA 30084
Telephone	(404) 618-0438

Emergency phone number(s)

Call CHEMTREC Day or Night
1-800-424-9300 / +1 703-527-3887

SECTION 2: Hazard identification

Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Acute toxicity, inhalation, Cat. 5
- Carcinogenicity, Cat. 2
- Sensitization, respiratory, Cat. 1
- Eye damage/irritation, Cat. 2A
- Skin corrosion/irritation, Cat. 2
- Sensitization, skin, Cat. 1
- Specific target organ toxicity (repeated exposure), Cat. 2

GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer
H373	May cause damage to organs [Respiratory Tract] through prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

Mixtures

Hazardous components

Component	Concentration
2,4'-Diphenylmethane diisocyanate (CAS no.: 5873-54-1; EC no.: 227-534-9)	**1- 3 % (weight)***
Benzene, 1,1'-methylenebis[isocyanato-, homopolymer (CAS no.: 39310-05-9)	**3 - 7 % (weight)***
4,4'-Methylenediphenyl diisocyanate (MDI) (CAS no.: 101-68-8; EC no.: 202-966-0)	**5 - 20 % (weight)***
Propylene carbonate (CAS no.: 108-32-7; EC no.: 203-572-1)	**5 - 10 % (weight)***

Trade secret statement (OSHA 1910.1200(i))

*The specific chemical identities and/or actual concentrations or actual concentration ranges for one or more listed components are being withheld as trade secrets under the US regulation 29 CFR 1910.1200(i).

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice — First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled	If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility. Acute and delayed symptoms: Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
In case of skin contact	Remove from skin immediately with soap and plenty of water. Take off immediately all contaminated clothing while washing. Wash contaminated clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. If skin irritation or rash occurs: Get medical advice/attention. Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching. May cause an allergic skin reaction.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Product reacts with moisture in eye! Immediately seek medical attention. Suitable emergency eye wash facility should be immediately available. Acute and delayed symptoms and effects: Causes serious eye damage. Product reacts with moisture in eye! Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.
If swallowed	SEEK IMMEDIATE MEDICAL ATTENTION! DELAYED TREATMENT MAY RESULT IN FATALITY. Do Not Induce Vomiting. Rinse mouth out with water. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use water fog, carbon dioxide or dry chemical. Water contamination in a closed container or a confined area is to be avoided due to the exothermic CO2 evolution upon water contamination.

Specific hazards arising from the chemical
During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

Fire or intense heat will decompose the product into CO2, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

Special protective actions for fire-fighters
Do not scatter material with high pressure water streams. Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous. Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO2 formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. Where exposure level is known, wear approved respirator suitable for the level of exposure. If exposure level is unknown, wear approved, positive pressure, self-contained respirator. In addition to the protective clothing in section 8, wear impermeable boots.

Environmental precautions
Prevent unreacted product from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up
Remove sources of ignition. Stop and contain / dam the spill. Absorb spill with inert material (vermiculite / diatomaceous earth). Shovel material into appropriate container for disposal. Do not place in sealed containers as it may still be reacting and could rupture.

SECTION 7: Handling and storage

Precautions for safe handling
Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

Conditions for safe storage, including any incompatibilities
Keep in manufacturer's packed pail. Maintain storage temperatures between 50˚F to 80˚F (10˚C to 29˚C). Store in a dry place. Protect from atmospheric moisture. Do not store product contaminated with water to prevent potential hazardous reaction. See Section 10 for more specific information.

Specific end use(s)
See the technical data sheet on this product for further information.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 101-68-8
Methylene bisphenyl isocyanate (MDI)
ACGIH: 0.005 ppm TLV® inhalation; Cal/OSHA: 0.005 ppm PEL inhalation; NIOSH: 0.05 mg/m3, (C) 0.2 mg/m3 [10-min] REL inhalation; OSHA: (C) 0.02 ppm PEL inhalation; (C) 0.2 mg/m3 PEL inhalation

Appropriate engineering controls
Use only with adequate ventilation. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Local exhaust ventilation may be necessary for some operations.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Safety glasses. If splash hazard, wear faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Ensure that eyewash stations and/or safety showers are close to the workstation location if working with concentrated product.

Skin protection
Wear protective gloves. Consult manufacturer specifications for further information. In cured form, the product is difficult to remove from skin and hair.

Body protection
Wear protective clothing. Clothing with full length sleeves and pants should be worn. Selection of additional items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection
Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Environmental exposure controls
Do not let uncured product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	White liquid
Odor	No data available.
Odor threshold	No data available.
pH	No data available.
Melting point/freezing point	No data available.
Initial boiling point and boiling range	No data available.
Flash point	> 150 °C (>302 °F)
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Upper/lower flammability limits	No data available.
Upper/lower explosive limits	No data available.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	1.067
Solubility(ies)	No data available.
Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	±340cps
Explosive properties	No data available.
Oxidizing properties	No data available.

SECTION 10: Stability and reactivity

Reactivity
Contact with moisture or temperatures above 350˚ F (177˚ C) will cause polymerization. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions
Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases. Water.

Conditions to avoid
Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid moisture. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

Incompatible materials
Amines, Strong Bases, Alcohols, Copper Alloys, Liquid Chlorine. Water- until ready to react

Hazardous decomposition products
Fire or intense heat will decompose the product into CO2, CO, Hydrogen Cyanide, Oxides of Nitrogen, Isocyanates, Isocyanic Acid, and dense black smoke.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Components:
4,4′-Methylenebis(phenyl isocyanate)
LD50 Oral - Rat - 9,200 mg/kg
LC50 Inhalation - Rat - > 2.24 mg/l - 1 hr

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer
LD50 Oral - Rat - > 5,000 mg/kg
LD50 Skin - Rabbit - > 9,400 mg/kg

Propylene carbonate
LD50 Oral - Rat - > 5,000 mg/kg
LD50 Skin - Rabbit - > 2,000 mg/kg

Acute oral toxicity
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Acute inhalation toxicity
At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

Skin corrosion/irritation
Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Serious eye damage/irritation
Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Respiratory or skin sensitization
May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity
No data available.

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available.

STOT-single exposure
May cause respiratory irritation.

STOT-repeated exposure
May cause damage to organs [Respiratory Tract] through prolonged or repeated exposure if inhaled.

Aspiration hazard
No data available.

SECTION 12: Ecological information

Toxicity
No data available on product

Components:

2,4'-Diphenylmethane diisocyanate
LC50 - Brachydanio rerio (zebrafish) - > 1,000 mg/l - 96 h
EC50 - Daphnia magna (water flea) - > 1,000 mg/l - 48 h

4,4′-Methylenebis(phenyl isocyanate)
EC50 - Daphnia magna (water flea) - 0.35 mg/ - 24 hr

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer
LC50 - Brachydanio rerio (zebrafish) - > 1,000 mg/l - 96 h
EC50 - Daphnia magna (water flea) - > 1,000 mg/l - 48 h

Propylene carbonate
LC50 - Cyprinus carpio (Carp) - > 1,000 mg/l - 96 h
EC50 - Daphnia magna (water flea) - > 1,000 mg/l - 48 h
EC19 - Pseudomonas putida - 7400 mg/l - 16 h

Propylene carbonate
EC50 - Pseudokirchneriella subcapitata (green algae) - 900 mg/l - 72 h

Persistence and degradability
No data available on product

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable.

Bioaccumulative potential
No data available on product

Mobility in soil
No data available.

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal of the product
Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Disposal of contaminated packaging
Dispose of as unused product.

Empty Container Precautions:
Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal. Dispose of per local, state and federal guidelines as required by your specific local. This product in its cured foam state is inert and non-toxic.

SECTION 14: Transport information

DOT (US)
Not regulated
Reportable quantity (RQ): 5000 lb (4,4'- Diphenylmethane Diisocyanate)

IMDG
Not regulated

IATA
Not regulated

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Chemical name: MDI
CAS number: 101-68-8

New Jersey Right To Know Components
Propylene carbonate
CAS-No. 108-32-7

METHYLENE BISPHENYL ISOCYANATE

CAS number: 101-68-8

Pennsylvania Right To Know Components
Propylene carbonate
CAS-No. 108-32-7

Chemical name: Benzene, 1,1'-methylenebis[4-isocyanato-
CAS number: 101-68-8

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information/disclaimer
DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Alchemy-Spetec be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Alchemy-Spetec has been advised of the possibility of such damages.