EMERGENCY CONTACTS

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Section 1. Chemical Product Information

Product Name: **Azo-Grout 424**

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Section 2. Hazards Identification

HAZARD CLASSIFICATION

Skin Irritation - Category 2
Eye Irritation - Category 2B
Respiratory Sensitization - Category 1
Skin Sensitization - Category 1
Carcinogenicity – Category 2

Hazard Statements
Causes serious eye irritation.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
Toxic to aquatic life.

Label Elements

Hazard Pictograms

Signal Word: DANGER!

Precautionary Statements
Prevention
Wear protective gloves and clothing.
Wear protective eye and face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
In case of inadequate ventilation wear respiratory protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
If exposed or concerned: Get medical advice/attention.
If skin irritation or a rash occurs: Get medical advice/attention.
If eye irritation persists: get medical advice/attention.
Take off contaminated clothing and wash before reuse.

Storage
Store locked up.
Store in a well ventilated place. Keep container tightly closed.

Disposal
Dispose of contents/container to appropriately licensed chemical waste/drum reclamation facilities.

Section 3. Composition/Information on Ingredients

Synonyms: Diphenylmethanediisocyanate

Component	CAS Number	Concentration
Dibutyl maleate	105-76-0	<40%
Polyether triol	9082-00-2	<40%
4,4' Diphenylmethane Diisocyanate	101-68-8	<20%

Section 4. First Aid Measures

First Aid for Eyes: Flush with plenty of water, preferably lukewarm for at least 15 minutes, holding eyelids open all the time. Get medical attention.

First Aid for Skin: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower and begin rinsing. Seek medical attention if irritation develops or persists after the area is washed.

First Aid for Inhalation: Move to an area free from risk of further exposure. Obtain medical attention. Administer oxygen or artificial respiration as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

First Aid For Ingestion: DO NOT INDUCE VOMITING. Wash mouth out with water. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

Note To Physician: EYES- Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. SKIN-This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. INGESTION- Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound. RESPIRATORY- Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from exposure to any diisocyanate.

Section 5. Fire Fighting Measures

Flash Point: >280 °F (>137 °C)

Extinguishing Media: Dry Chemical, CO2, chemical foam, water spray

Special Instructions: 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.

Unusual Hazards: 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.

Section 6. Accidental Release Measures

Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate area. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Major spill or leak (Standing liquid); released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor spill or leak (Wet surface): cover spill area with suitable absorbent material (Kitty Litter Oil Dry).

Section 7. Handling and Storage

Storage Temperature: 64 °F (18 °C) / 86 °F (30 °C)

Handling/Storage Precautions: 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 chronic 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. Employees 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. 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 seal if contamination is suspected. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Section 8. Personal Protection

Exposure Limits

ACGIH:	.005 ppm TWA .051 mg/m3
OSHA:	.02 ppm Ceiling .20 mg/m3 Ceiling

Eye Protection: When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

Skin/Body Protection: Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact. Gloves should be worn. Nitrile rubber showed excellent resistance. Butyl rubber, neoprene and PVC are also effective.

Ventilation: Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed or aerosolized. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation. To ensure that published limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

Respirator Requirements: Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air purifyintg respirator (APR). If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or (b) a change out schedule based

Section 8. Personal Protection (Cont.)

on information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in a written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

Medical Surveillance: All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

Section 9. Physical and Chemical Properties

Physical form: Liquid
Color: Cloudy Clear

Section 10. Stability and Reactivity

Hazardous Reactions: Contact with moisture, other materials that react with isocyanates, or temperatures above 350 °F (177 °C), may cause polymerization.

Material to Avoid: Water, amines, strong bases, alcohols, copper alloys, aluminum.

Decomposition Product: By high heat and fire: carbon monoxide, oxides of nitrogen , hydrogen cyanide, carbon dioxide, dense black smoke, isocyanate, isocyanic acid, other undetermined compounds.

Section 11. Toxicological Information

Toxicity data based on polymeric MDI

Acute Toxicity: Oral LD50- Greater than 2,000 mg/kg (Rat Male/Female)

Skin Irritation: Slightly irritating (Rabbit)

Inhalation LC50: 490 mg/m3, vapor, 4 h (Rat)

Repeated Dose Toxicity: 90 days inhalation: NOAEL: 1 mg/m3, (Rat Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.
2 years inhalation: NOAEL: 0.2 mg/m3, (Rat Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.

Mutagenicity: Genetic Toxicity in Vitro: Bacterial- gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without).

Section 11. Toxicological Information (Cont.)

Carcinogenicity: Rat, Male/Female, inhalation, 2 years, 6 hrs/day 5 days/week: Exposure to a level of 6 mg/m3 polymeric MDI was related to the occurrence of lung tumors. This level is significantly over the TLV for MDI.

Toxicity/Teratogenicity: Rat, Female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m3, NOAEL (maternal): 4 mg/m3- No Teratogenic effects observed at doses tested. Fetotoxicity seen only with maternal toxicity.

Toxicity Data For 4,4'-Diphenylmethane Diisocyanate (MDI)

Acute Toxicity: Dermal LD50- >10,000 mg/kg(Rabbit).
Inhalation LC50- 369 mg/m3, 4 hrs (Rat Male/Female); >2240 mg/m3, aerosol, 1 hr (Rat).

Skin Irritation: Rabbit, Draize Test, slightly irritating.

Eye Irritation: Rabbit, Draize Test, slightly irritating.

Sensitization: Dermal: sensitizer (guinea pig, Maximisation Test (GPMT)); inhalation: sensitizer (guinea pig)

Repeated Dose Toxicity: 90 days inhalation: NOAEL: 0.3 mg/m3, (Rat Male/Female, 18 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.

Mutagenicity: Genetic Toxicity in Vitro: Ames: (Salmonella typhimurium, Metabolic Activation: with/without). Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results. Genetic Toxicity in Vivo: Micronucleus Assay: negative (Mouse)

Carcinogenicity: Rat, Female, inhalation, 2 years, 17 hrs/day 5 days/week: negative.

Section 12. Ecological Information

Biodegradation- 0%, exposure time 28 days.

Bioaccumulation- Rainbow trout, exposure time 112 d, <1 BCF

Acute and Prolonged Toxicity To Fish- LC0: >1,000 mg/l (Zebra fish (Brachydanio rerio), 96 hrs); LC0: >3,000 mg/l (Killifish (Oryzias latipes), 96 h)

Acute Toxicity to Aquatic Invertebrates- EC50: >1,000 mg/l (Water flea (Daphnia magna), 24 hrs)

Toxicity to Aquatic Plants- NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 hrs)

Toxicity to Microorganisms- EC50: > 100 mg/l, (Activated sludge microorganisms, 3 hrs)

Additional Ecotoxicological Remarks- Ecotoxicity data based on polymeric MDI.

Acute and Prolonged Toxicity to Fish- LC50: > 500 mg/l (Zebra fish (Brachydanio rerio), 24 hrs)

Acute Toxicity to Aquatic Invertebrates- EC50: > 500 mg/l (Water flea (Daphnia magna), 24 hrs)

Section 13. Disposal Considerations

Waste Disposal Method- Waste must be disposed of in accordance with federal, state, and local, environmental control regulations. Incineration is the preferred method.

Section 14. Transportation Information

Not regulated for transportation.

Section 15. Regulatory Information

OSHA: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: Listed on TSCA Inventory.

EPA CERCLA Hazardous Substance (40 CFR 302): 4,4' Diphenylmethane Diisocyanate (MDI), CAS # 101-68-8.
Reportable Quantity: 5000 lbs.

SARA Title III: Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)- None.
Section 311/312 Hazard Categories- Acute Healh Hazard, Chronic Health Hazard.
Section 313 Toxic Chemicals (40 CFR 372.65)- Polymeric Diphenylmethane Diisocyanate (pMDI); 4,4' Diphenylmethane Diisocyanate (MDI)

RCRA Status: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24).

Section 16. Other Information

HMIS Classification:
Health Hazard: 2
Flammability: 1
Physical Hazards: 0

0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe
* = Chronic Health hazard

NFPA Classification:
Health Hazard: 3
Fire Hazard: 1
Reactivity Hazard: 0

0=Insignificant, 1=Slight, 2=Moderate, 3=High, 4=Extreme

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