

1. PRODUCT & COMPANY IDENTIFICATION

SUPPLIER DETAILS:

 Sprayroq
 2870 Crestwood Blvd
 Irondale, AL 35210
 (205)957-0020
 Sprayroq.com

EMERGENCY:

CHEMTREC 800.424.9300

2. HAZARD(S) IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS):

| | | |
|---------------|---|-------------|
| HEALTH | Respiratory or skin sensitization, 1 | Respiratory |
| HEALTH | Respiratory or skin sensitization, 1 | Skin |
| HEALTH | Skin corrosion/irritation, 2 | |
| HEALTH | Serious Eye Damage/Eye Irritation, 2 | A |
| HEALTH | Specific target organ toxicity - Single exposure, 3 | |
| HEALTH | Acute toxicity, 4 | Oral |
| HEALTH | Carcinogenicity, 2 | |

GHS LABEL ELEMENTS
SIGNAL WORD DANGER

PICTOGRAMS

GHS HAZARD STATEMENTS

| | |
|-------------|---|
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| H317 | May cause an allergic skin reaction |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H336 | May cause drowsiness or dizziness |
| H302 | Harmful if swallowed |
| H351 | Suspected of causing cancer |

GHS PRECAUTIONARY STATEMENTS

| | |
|-----------------------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection |
| P284 | Wear respiratory protection |
| P305+P351+P338 | IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing |
| P310 | Immediately call a POISON CENTER or doctor/physician |



HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS

ROUTE OF ENTRY:

Eyes; Ingestion; Inhalation; Skin

TARGET ORGANS:

Respiratory system; Skin; Eyes

INHALATION:

At room temperature, MDI vapors are minimal due to low vapor pressure. However, heating, spraying, foaming, or otherwise mechanically dispersing (drumming, venting or pumping) operations may generate vapor or aerosol concentrations sufficient to cause irritation or other adverse effects. Excessive exposure may cause irritation of the eyes, upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficult breathing and a feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decreased ventilator capacity) has been associated with overexposure to isocyanates.

Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure

SKIN CONTACT:

Product is a skin sensitizer. Causes irritation with symptoms of reddening, itching and swelling. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization, but is not expected to result in absorption of amounts sufficient to cause other adverse effects. May stain skin. Cured material is difficult to remove.

EYE CONTACT:

As a liquid, vapor, aerosol or dust, may cause irritation, inflammation, and/or damage to sensitive eye tissue. Symptoms include reddening, tearing, stinging and swelling. May cause corneal injury. Prolonged contact may cause conjunctivitis.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:

| CAS# | % | CHEMICAL NAME |
|----------|---------|-------------------------------------|
| 101-68-8 | 70-100% | 4,4'-Methylenediphenyl diisocyanate |



4. FIRST AID MEASURES

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility immediately.

SKIN CONTACT:

Wash off in flowing warm water or shower with soap. Remove and wash contaminated clothing and discard contaminated shoes. For severe exposure, get under safety shower after removing clothing, then seek medical attention. If redness, itching or a burning sensation develops or persists after the area is washed, consult a physician.

EYE CONTACT:

Flush with large amounts of water for 15 minutes. Materials containing MDI may react with the moisture in the eye forming a thick material that is difficult to remove. Get immediate medical attention.

INGESTION:

DO NOT INDUCE VOMITING. Give 1-2 cups of milk or water to drink. Never give anything by mouth to an unconscious person. Seek medical attention.

5. FIRE FIGHTING MEASURES

| | |
|----------------------------|-------------------------|
| FLAMMABILITY: | OSHA - none; DOT - none |
| FLASH POINT: | 399°F/204°C |
| FLASH POINT METHOD: | Closed Cup |
| BURNING RATE: | N/A |
| AUTOIGNITION TEMP: | 600°C/1,112°F |
| LEL: | N/A |
| UEL: | N/A |

Use dry chemical, foam, carbon dioxide, foam or water spray for large fires. The reaction between water and hot isocyanate may be vigorous. If possible, contain fire run-off water.

PROTECTIVE EQUIPMENT:

Wear positive-pressure self-contained breathing apparatus with full face mask and full protective clothing.

UNUSUAL HAZARDS:

At temperatures greater than 400°F, polymeric MDI can polymerize and decompose which will cause pressure build-up in closed containers. Explosive rupture is possible. Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture the containers. Downwind personnel must be evacuated.

FIRE DEGRADATION PRODUCTS:

Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.



6. ACCIDENTAL RELEASE MEASURES

SPILL:

Evacuate and isolate spill area. Remove any ignition sources. With adequate ventilation and appropriate personal protective equipment, cover the area with an inert absorbent material such as clay or vermiculite and transfer to metal waste containers. Move container to a well ventilated area (outside), but do not seal the container with the isocyanate mixture. Larger quantities of liquid may be transferred directly to drums for disposal. Decontaminate or discard all clean-up equipment.

NOTE: ISOCYANATES WILL REACT WITH WATER AND GENERATE CARBON DIOXIDE. THIS COULD RESULT IN THE RUPTURE OF ANY CLOSED CONTAINERS.

CLEAN UP:

The area should then be flushed with a decontamination solution. The decontamination solution is a 5-10% mixture of sodium carbonate and 0.5% liquid detergent in water solution or a 3-8% concentrated ammonium hydroxide and 0.5% liquid detergent in water. Use 10 parts decontamination solution to 1 part spilled material. If the ammonium hydroxide solution is used, ammonia will be evolved as a vapor. Use caution to avoid exposure to high concentrations of ammonia. Allow to stand for 48 hours letting evolved carbon dioxide escape.

7. HANDLING & STORAGE

HANDLING PRECAUTIONS:

Use personal protective equipment when transferring material to or from drums, totes or other containers. The reaction of polyols and isocyanates generates heat. Contact of the reacting materials with skin or eyes can cause irritation and may be difficult to remove from the affected areas. Do not smoke or use naked lights, open flames, space heaters, or other ignition sources near pouring, frothing or spraying operations.

SPECIAL EMPHASIS FOR SPRAY APPLICATIONS:

Inspect the application area from the potential to expose other persons or for overspray to drift onto buildings, vehicles or other property. When spraying building exteriors, persons entering or exiting the building as well as those inside could be exposed to polyisocyanates due to wind conditions, open windows or air intakes. Do not begin application work until these potential problems have been corrected.

STORAGE REQUIREMENTS:

When stored between 15 and 30°C (60 and 85°F) in dry place in tightly sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture pickup. Do not reseal if contamination is suspected.



8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS:

MDI has a low vapor pressure at room temperature. Monitoring is required to determine engineering controls. Uses requiring heating and/or spraying may require more aggressive engineering controls or PPE. Eyewash and safety showers should be available.

PERSONAL PROTECTIVE EQUIPMENT:

HMIS PP, K | Full Face Respirator, Gloves, Full Suit, Boots

RESPIRATORY PROTECTION:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

HAND PROTECTION:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

EYE PROTECTION:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

SKIN & BODY PROTECTION:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

HYGIENE MEASURES:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.



COMPONENTS WITH WORKPLACE CONTROL PARAMETERS:

| | | |
|------------|---|--|
| TWA | 0.0050 ppm Respiratory sensitization | USA. ACGIH Threshold Limit Values (TLV) |
| C | 0.02 ppm 0.2 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000 |
| C | 0.02 ppm 0.2 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants |

**The value in mg/m3 is approximate. Ceiling limit is to be determined from breathing-zone air samples.*

| | | |
|------------|---|--|
| TWA | 0.0050 ppm 0.05 mg/m3 10 minute ceiling value | USA. NIOSH Recommended Exposure Limits |
| C | 0.2 ppm 0.2 mg/m3 10 minute ceiling value | USA. NIOSH Recommended Exposure Limits |

Polymethylene polyphenyl isocyanate (PAPI) no data available

9. PHYSICAL & CHEMICAL PROPERTIES

| | | | |
|-----------------------|----------------------|----------------------|--|
| Appearance | Non-pigmented liquid | Odor | Musty |
| Physical State | Liquid | Molecular Formula | N/A |
| Odor Threshold | No data available | Solubility | Not soluble in water; REACTS with w |
| Spec Grav./Density | N/A | Percent Volatile | 0% |
| Viscosity | Approx. 400 cps | Freezing/Melting Pt. | 60°F |
| Boiling Point | Approx. 406°F | Flash Point | 399°F/204°C |
| Flammability | None | Vapor Density | >1 |
| Partition Coefficient | No data available | Ignition Temp | 600°C/1,112°F |
| Vapor Pressure | No data available | UFL/LFL | No data available |
| pH | No data available | | |
| Evap. Rate | <1 | | |
| Decomp Temp | No data available | | |

10. STABILITY & REACTIVITY

CHEMICAL STABILITY:

Polyisocyanates are highly reactive chemicals that should be handled and stored in a way to avoid many common substances, including water and moisture. Product is stable under normal conditions.

CONDITIONS TO AVOID:

Moisture and/or water. High temperatures, sparks, flame and temperature above 350°F.



MATERIALS TO AVOID:

Water; strong bases; alcohols; amines; metal compounds.

HAZARDOUS DECOMPOSITION:

By fire or excessive heat: carbon monoxide, carbon dioxide, oxides of nitrogen, traces of hydrogen cyanide, ammonia and MDI vapors. Excess gas may rupture containers.

HAZARDOUS POLYMERIZATION:

May occur with incompatible reactants, especially strong bases, water or temperatures over 320°F (50°C).

11. TOXICOLOGICAL INFORMATION

4,4'-METHYLENEDIPHENYL DIISOCYANATE (101-68-8)

Information on toxicological effects:

ACUTE TOXICITY:

ORAL LD50 LD50 ORAL - RAT: 4,700 mg/kg

INHALATION LC50 DERMAL LD50: No data available

Other information on acute toxicity

SKIN CORROSION/IRRITATION: SERIOUS EYE DAMAGE/EYE IRRITATION:

EYES - RABBIT: Moderate eye irritation

RESPIRATORY OR SKIN SENSITIZATION: No data available

May cause allergic respiratory and skin reactions

GERM CELL MUTAGENICITY:

Laboratory experiments have shown mutagenic effects

GENOTOXICITY IN VITRO - HUMAN: Lymphocyte sister chromatid exchange

GENOTOXICITY IN VIVO - RAT: Inhalation DNA damage

CARCINOGENICITY:

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. Limited evidence of carcinogenicity in animal studies.

IARC: 3 - GROUP 3: Not classifiable as to its carcinogenicity to humans (Diphenylmethane-4,4'-diisocyanate)

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 - RAT - INHALATION:

MATERNAL EFFECTS: _____ Other effects _____

SPECIFIC DEVELOPMENTAL ABNORMALITIES:

MUSCULOSKELETAL SYSTEM: _____ No data available _____

TERATOGENICITY: _____ No data available _____

SPECIFIC TARGET ORGAN TOXICITY:

SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM): _____ May cause respiratory irritation _____

REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM): _____ No data available _____

ASPIRATION HAZARD:

ASPIRATION HAZARD: _____ No data available _____

POTENTIAL HEALTH EFFECTS:

May be fatal if inhaled. Causes respiratory tract irritation. May be harmful if swallowed. May be harmful if absorbed through skin. Causes skin irritation. Causes eye irritation.

SIGNS AND SYMPTOMS OF EXPOSURE:

Cough, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects may be delayed.

SYNERGISTIC EFFECTS: _____ No data available _____

Additional information

RTECS: NQ9350000

POLYMETHYLENE POLYPHENYL ISOCYANATE (PAPI) (9016-87-9)

Information on toxicological effects:

ACUTE TOXICITY:

ORAL LD50: _____ No data available _____

INHALATION LC50 - RAT: _____ 4 h - 0.49 mg/l _____

Other information on acute toxicity

SKIN CORROSION/IRRITATION: NO DATA AVAILABLE

SERIOUS EYE DAMAGE/EYE IRRITATION: _____ No data available _____

RESPIRATORY OR SKIN SENSITIZATION: _____ May cause allergic respiratory and skin reactions _____

GERM CELL MUTAGENICITY:

_____ No data available _____



CARCINOGENICITY:

IARC: 3 - GROUP 3: Not classifiable as to its carcinogenicity to humans (Isocyanic acid, polymethylenepolyphenylene ester)

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

SPECIFIC TARGET ORGAN TOXICITY:

SINGLE EXPOSURE (GLOBALLY HARMONIZED SYSTEM): Inhalation - May cause respiratory irritation

REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM): No data available

ASPIRATION HAZARD:

ASPIRATION HAZARD: No data available

POTENTIAL HEALTH EFFECTS:

Inhalation May be fatal if inhaled. Causes respiratory tract irritation. Ingestion Harmful if swallowed. Skin Harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

SIGNS AND SYMPTOMS OF EXPOSURE:

salivary gland obstruction, allergic dermatitis, respiratory difficulties, bronchoconstriction, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SYNERGISTIC EFFECTS: No data available

Additional information

RTECS: Not available

12. ECOLOGICAL INFORMATION

4,4'-METHYLENEDIPHENYL DIISOCYANATE (101-68-8)

Information on ecological effects:

TOXICITY:

DAPHNIA EC50 - DAPHNIA MAGNA (WATER FLEA) AND OTHER AQUATIC INVERTEBRATES: 0.35 mg/l - 24 h

PERSISTENCE AND DEGRADABILITY: No data available

BIOACCUMULATIVE POTENTIAL: No data available



| | |
|---------------------------------|--------------------------|
| MOBILITY IN SOIL: | No data available |
| PBT AND VPVB ASSESSMENT: | No data available |
| OTHER ADVERSE EFFECTS: | Do not empty into drains |

POLYMETHYLENE POLYPHENYL ISOCYANATE (PAPI) (9016-87-9)

Information on ecological effects:

TOXICITY: NO DATA AVAILABLE

PERSISTENCE AND DEGRADABILITY: No data available

BIOACCUMULATIVE POTENTIAL: No data available

MOBILITY IN SOIL: No data available

PBT AND VPVB ASSESSMENT: No data available

OTHER ADVERSE EFFECTS: No data available

13. DISPOSAL CONSIDERATIONS

DISPOSAL:

Any disposal practice must be in compliance with all federal, state and local laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material.

Do not allow material to enter sewers, a body of water, or contact the ground. Refer to RCRA 40 CFR 261, and/or any other appropriate federal, state or local requirements for proper classification information.

14. TRANSPORT INFORMATION

Non DOT/RCRA regulated



15. REGULATORY INFORMATION

COMPONENT (CAS#) [%] - CODES:

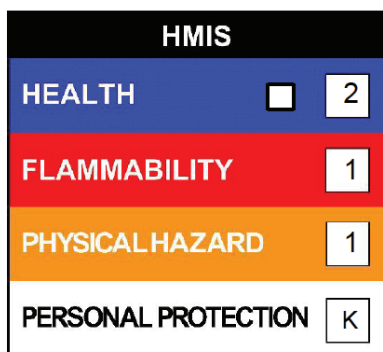
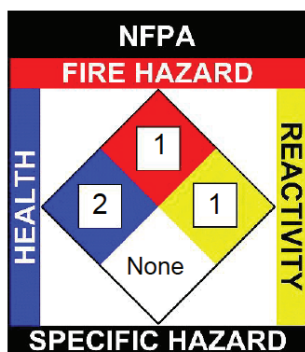
RQ(5000LBS), 4,4'-Methylenediphenyl diisocyanate (101-68-8) CERCLA, HAP, IARC, MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

REGULATORY CODE DESCRIPTIONS:

| | |
|-----------------|---|
| RQ: | Reportable Quantity |
| CERCLA: | Superfund clean up substance |
| HAP: | Hazardous Air Pollutants |
| IARC: | IARC Carcinogen Risks |
| MASS: | MA Massachusetts Hazardous Substances List |
| NJHS: | NJ Right-to-Know Hazardous Substances |
| OSHA: | OSHA Workplace Air Contaminants |
| PA: | PA Right-To-Know List of Hazardous Substances |
| SARA313: | SARA 313 Title III Toxic Chemicals |
| TSCA: | Toxic Substances Control Act |
| TXAIR: | TX Air Contaminants with Health Effects Screening Level |

16. OTHER INFORMATION

| | |
|------------------|--|
| NFPA: | Health = 2, Fire = 1, Reactivity = 1, Specific Hazard = None |
| HMIS III: | Health = 2, Fire = 1, Physical Hazard = 1 |
| HMIS PPE: | K - Full Face Respirator, Gloves, Full Suit, Boots |



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