

**SECTION 1: Identification****1.1. Identification**

Product form : Mixture  
Product name : Miracle Foamseal F2100A Isocyanate

**1.2. Recommended use and restrictions on use**

No additional information available

**1.3. Supplier**

Holcim Solutions and Products US, LLC  
26 Century Boulevard, Suite 205  
Nashville, Tennessee 37214  
1-800-878-7876 • www.holcimmiracle.com

**1.4. Emergency telephone number**

Emergency number : CHEMTREC (US Transportation): (800) 424-9300 International: +1 (703) 527-3887

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS US classification**

Acute toxicity (inhalation), Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/irritation, Category 2B	H320
Respiratory sensitization, Category 1	H334
Skin sensitization, Category 1	H317
Specific target organ toxicity - Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity - Repeated exposure, Category 2	H373

**2.2. GHS Label elements, including precautionary statements****GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H320 - Causes eye irritation  
H332 - Harmful if inhaled  
H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation  
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) :

P260 - Do not breathe mist/vapors/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P272 - Contaminated work clothing must not be allowed out of the workplace.  
P280 - Wear protective gloves, protective clothing, chemical goggles, & face protection.  
P284 - [In case of inadequate ventilation] wear respiratory protection.  
P302+P352 - If on skin: Wash with plenty of water.  
P304+P341 - If inhaled: If breathing is difficult, 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  
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 or doctor.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P363 - Wash contaminated clothing before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.

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P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%
Isocyanic acid, polymethylenepolyphenylene ester	(CAS-No.) 9016-87-9	80 – 100
4-4'-Methylenediphenyl diisocyanate (MDI isomer, part of CAS-No. 9016-87-9)	(CAS-No.) 101-68-8	30 – 60

\* In accordance with paragraph (i) of the OSHA Hazard Communication Standard (29 CFR §1910.1200), the specific chemical identity or exact weight % has been withheld as a trade secret.

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If breathing is difficult, supply oxygen. If breathing has stopped, give artificial respiration.
- First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention immediately.
- First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention immediately. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects : Harmful if inhaled. Causes eye irritation. Causes skin irritation. May cause an allergic skin reaction. May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.
- Symptoms/effects after inhalation : Harmful if inhaled. May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
- Symptoms/effects after skin contact : Causes skin irritation. May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Causes eye irritation.
- Symptoms/effects after ingestion : May cause gastrointestinal irritation.
- Chronic symptoms : May cause damage to organs through prolonged or repeated exposure.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Carbon dioxide. Dry powder.
- Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread.

### 5.2. Specific hazards arising from the chemical

- Fire hazard : Not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity : Reacts with water to form CO<sub>2</sub> gas.

### 5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Eliminate all ignition sources if safe to do so.
- Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not dispose of fire-fighting water in the environment.

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- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.
- Other information : Under fire conditions closed containers may rupture or explode.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear protective equipment as described in section 8.
- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

#### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

#### 6.3. Methods and material for containment and cleaning up

- For containment/cleaning up : SMALL SPILL: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on absorbent, such as sawdust or vermiculite, and sweep into opentop containers with lids for disposal. After all visible traces, including ignitable vapors, have been removed, thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal. Only those persons who are adequately trained, authorized, and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up.

LARGE SPILL: Keep spectators away. Only those persons who are adequately trained, authorized and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up. Ventilate the area by natural means or by explosion proof means (i.e. fans). Know and prepare for spill response before using or handling this product. Eliminate all ignition sources (flames, hot surfaces, portable heaters and sources of electrical, static, or frictional sparks). Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered and labeled metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools and appropriate PPE. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.

#### 6.4. Reference to other sections

See Sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : For professional or industrial use only. Follow label instructions. Keep out of the reach of children. Not for consumption. No smoking. Do not breathe vapors. Avoid contact with body. Empty containers must not be washed and re-used for any purpose. Contact lens wearers must wear protective eye wear around chemical vapors and liquid. Wash hands thoroughly after handling. To prevent build-up of vapors, use adequate natural and/or mechanical ventilation (e.g. open all windows and doors to achieve cross ventilation).

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in original container. Keep container closed when not in use. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store in a dry, cool and well-ventilated place.
- Incompatible materials : Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Moisture. Strong oxidizers. Water.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)		
ACGIH	Remark (ACGIH)	OELs not established
OSHA	Remark (OSHA)	OELs not established

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4-4'-Methylenediphenyl diisocyanate (101-68-8)		
ACGIH	ACGIH OEL TWA [ppm]	0.005 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: Resp sens
ACGIH	Regulatory reference	ACGIH 2022
OSHA	OSHA PEL (Ceiling)	0.2 mg/m <sup>3</sup>
OSHA	OSHA PEL C [ppm]	0.02 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment symbol(s):



#### Personal protective equipment:

Gloves. Protective goggles. Wear chemically impervious apron over labcoat and full coverage clothing.

#### Hand protection:

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Be aware that the chemical may penetrate the gloves. Frequent changes are advisable. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

#### Eye protection:

Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

#### Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

#### Respiratory protection:

Use NIOSH (or other equivalent national standard) -approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Brown
Odor	: Musty
Odor threshold	: 0.4 ppm based on literature for MDI. Odor is inadequate warning of excessive exposure.
pH	: No data available
Melting point	: No data available
Freezing point	: Crystals form < 10 °C (50 °F) (literature)
Boiling point	: Decomposes prior to boiling
Flash point	: 390 °F (Pensky Martens CC)(FP for MDI)
Relative evaporation rate (n-butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: <0.00001 mm Hg @25° C (77 °F) (literature)
Relative vapor density at 20 °C	: 8.5 (literature)

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Density	: 10.34 lb/gal
Solubility	: Insoluble in water. Reacts to evolve CO <sub>2</sub>
Partition coefficient n-octanol/water (Log Pow)	: Reacts with water.
Auto-ignition temperature	: 600 °C (1112 °F) literature
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: 160 – 250 mPa.s @ 25 C (77 °F) ASTM D4889
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

VOC content : 0.24 g/l EPA method 24

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with water to form CO<sub>2</sub> gas.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

Polymerization may occur with heat or catalyst (e.g. strong bases, water).

### 10.4. Conditions to avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge. Moisture.

### 10.5. Incompatible materials

Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Moisture. Strong oxidizers. Water. Metals such as aluminum, zinc, brass, tin, copper., galvanized metals.

### 10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Carbon oxides (CO, CO<sub>2</sub>). Oxides of nitrogen. Isocyanates, Hydrogen cyanide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

#### Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

LD50 oral rat	49 g/kg
LD50 dermal rabbit	> 9.4 g/kg
LC50 Inhalation - Rat	0.387 mg/l/4h

#### 4-4'-Methylenediphenyl diisocyanate (101-68-8)

LD50 oral rat	31600 mg/kg
LD50 dermal rabbit	> 9400 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation (dust/mist)- Rat	0.49 mg/l 4 h
LC50 Inhalation (aerosol)- Rat	2.24 mg/l 1 hour

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.

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Aspiration hazard	: Not classified
Viscosity, kinematic	: Not applicable
Symptoms/effects	: Harmful if inhaled. Causes eye irritation. Causes skin irritation. May cause an allergic skin reaction. May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes eye irritation.
Symptoms/effects after ingestion	: May cause gastrointestinal irritation.
Chronic symptoms	: May cause damage to organs through prolonged or repeated exposure.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: No information available.
Hazardous to the aquatic environment, short-term (acute)	: Not classified.
Hazardous to the aquatic environment, long-term (chronic)	: Not classified.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Other adverse effects : No data available.

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods	: Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Transport document description (DOT)	: UN3082 Environmentally hazardous substances, liquid, n.o.s. (Methylene diisocyanate (MDI)), 9, III
UN-No.(DOT)	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s. Methylene diisocyanate (MDI)
Class (DOT)	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT)	: III - Minor Danger
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



DOT Quantity Limitations Passenger aircraft/rail : No limit  
(49 CFR 173.27)

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DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Emergency Response Guide (ERG) Number : 171

Other information : No supplementary information available.

### Transport by sea (IMDG)

Not regulated

### Air transport (IATA)

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

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All chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb. 2019, as amended Feb. 2021, or are otherwise exempt or regulated by other agencies such as FDA or FIFRA.	
SARA Section 311/312 Hazard Classes	Health hazard - Skin corrosion or Irritation Health hazard - Acute toxicity (any route of exposure) Health hazard - Respiratory or skin sensitization Health hazard - Serious eye damage or eye irritation Health hazard - Specific target organ toxicity (single or repeated exposure)

### 15.2. International regulations

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)	
Toxic Substance (CEPA - Schedule I)	Yes

### 15.3. US State regulations

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

Component	State or local regulations
Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)	U.S. - New Jersey - Right to Know Hazardous Substance List
4-4'-Methylenediphenyl diisocyanate (101-68-8)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Massachusetts - Right To Know List

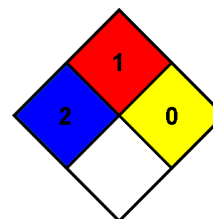
## SECTION 16: Other information

Other information : Author: JAD.

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



### HMIS Hazard Rating

Health : 2

Flammability : 1

Physical : 0

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*