



SAFETY DATA SHEET

IR A-Side

SECTION 1) PRODUCT NAME AND COMPANY INFORMATION

PRODUCT CODE: IRASIDE

TRADE NAME: IR A SIDE

SECTION 2) HAZARDS IDENTIFICATION

Classification: Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) - Category 3

Specific Target Organ Toxicity - Repeated Exposure - Category 2

Skin Irritation - Category 2

Eye Irritation - Category 2A

Respiratory Sensitizer (Solid/Liquid) - Category 1

Skin Sensitizer - Category 1
Carcinogenicity - Category 2

Acute toxicity, Oral - Category 5

Signal Word: Danger

Hazardous Statements - Health:

H335 - May cause respiratory irritation

H373 - May cause damage to organs through prolonged or repeated exposure.

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H303 - May be harmful if swallowed

Precautionary Statements - General:

P101 - If medical advice is needed, have product container or label at hand

P102 - Keep out of reach of children

P103 - Read label before use

Precautionary Statements - Prevention:

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P264 - Wash thoroughly after handling

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P284 - <In case of inadequate ventilation> wear respiratory protection

P272 - Contaminated work clothing should not be allowed out of the workplace

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P233 - Keep container tightly closed

Precautionary Statements - Response:

P308 IF exposed or concerned: P313 - Get medical advice/attention

P305 - IF IN EYES: P351 Rinse cautiously with water for several minutes. P338 Remove contact lenses, if present and easy to do. Continue rinsing.

P337 If eye irritation persists: P313 - Get medical advice/attention

P304 IF INHALED: - P340 Remove person to fresh air and keep comfortable for breathing

P342 - If experiencing respiratory symptoms: P311 Call a POISON CENTER/doctor





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SECTION 2) HAZARDS IDENTIFICATION *continued*

P302 - IF ON SKIN: P352 Wash with plenty of water

P321 - Specific treatment (see section 4 on this SDS)

P332 - If skin irritation occurs: P362 - Take off contaminated clothing. P364 And wash it before reuse.

P333 - If skin irritation or a rash occurs: P313 Get medical advice/attention

P314 - Get Medical advice/attention if you feel unwell

P312 - Call a POISON CENTER/doctor if you feel unwell

Precautionary Statements - Storage:

P403 - Store in a well-ventilated place. P405 Store locked up

Precautionary Statements - Disposal:

P501 - Dispose of contents/ container to an approved waste disposal plant

SECTION 3) COMPOSITION / INFORMATION ON INGREDIENTS

| CAS | Chemical Name | % By Weight |
|--------------|-------------------------------------|-------------|
| 0068515-48-0 | PHTHALATE ESTERS | 26% - 48% |
| 0009016-87-9 | POLYMETHYLENE POLYPHENYL ISOCYANATE | 21% - 38% |
| 0000101-68-8 | 4,4'-METHYLENEDIPHENYL DIISOCYANATE | 15% - 28% |
| 0026447-40-5 | MDI (MONOMER) | 5% - 9% |

SECTION 4) FIRST AID MEASURES

Inhalation: Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor. IF exposed/feel unwell/concerned: Call a POISON CENTER/doctor. Eliminate all ignition sources if safe to do so.

Skin Contact: Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before re-use or discard. IF exposed or concerned: Get medical advice/attention.

Eye Contact: Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Give 1 or 2 glasses of milk or water to drink and get medical attention/advice. IF exposed or concerned: Get medical advice/attention.

SECTION 5) FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, foam, carbon dioxide is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media: If water is used, use very large quantities of cold water. The reaction between water and hot isocyanate may be vigorous.

Specific Hazards in Case of Fire: Excessive pressure or temperature may cause explosive rupture of containers. Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

Fire-fighting Procedures: Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.



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SECTION 5) FIRE FIGHTING MEASURES *continued*

Special Protective Actions: Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required. Care should always be exercised in dust/mist areas.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Isolate hazard area and keep unnecessary people away. Remove all possible sources of ignition in the surrounding area. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. If spilled material is cleaned up using a regulated solvent, the resulting waste mixture may be regulated.

Recommended Equipment: Positive pressure, full-face piece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).

Personal Precautions: Avoid breathing vapors. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up: Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 2.0% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's safety data sheets. Treat the spill area with the decontamination solution, using about 10 parts of the solution for each part of the spill, and allow it to react for at least 15 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. Residues from spill cleanup, even when treated as described may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. Slowly stir the isocyanate waste into the decontamination solution described above. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away, residues may still be subject to RCRA storage and disposal requirements. Dispose of in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

SECTION 7) HANDLING AND STORAGE

General: Wash hands after use. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. Eyewash stations and showers should be available in areas where this material is used and stored.

Ventilation Requirements: Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements: Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Keep liquid and vapors away from sparks and flame, store in containers above ground and surrounded by dikes to contain spills or leaks. Do not cut, drill, grind, weld, or perform similar operations on or near containers.

SECTION 8) EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield. **Skin**

Protection: Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.



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SECTION 8) EXPOSURE CONTROLS / PERSONAL PROTECTION *continued*

Use of an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Respiratory Protection: If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respiratory with a full face piece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

Appropriate Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

| | |
|-------------------------------------|--------------------------|
| 4,4'-METHYLENEDI-PHENYLDIISOCYANATE | Chemical Name |
| 020. ceiling | OSHA TWA (ppm) |
| 0. ceiling2 | OSHA TWA (mg/m3) |
| | OSHA STEL (ppm) |
| | OSHA STEL (mg/m3) |
| 1 | OSHA Tables (Z1, Z2, Z3) |
| | OSHA Carcinogen |
| | OSHA Skin designation |
| 0.005 | NIOSH TWA (ppm) |
| 0.050 | NIOSH TWA (mg/m3) |
| | NIOSH STEL (ppm) |
| | NIOSH STEL (mg/m3) |
| | NIOSH Carcinogen |
| .005 | ACGIH TWA (ppm) |
| .051 | ACGIH TWA (mg/m3) |
| | ACGIH STEL (ppm) |
| | ACGIH STEL (mg/m3) |

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

| | |
|-------------------------------------|-------------------------------------|
| Density: 9.25 lb/gal | Viscosity: N.A |
| Specific Gravity: 1.11 | Lower Explosion Level: N.A |
| VOC Regulatory: 0.00 lb/gal | Upper Explosion Level: N.A. |
| VOC Part A & B Combined: N.A. | Vapor Pressure: N.A. |
| Appearance: Clear Liquid | Vapor Density: Heavier than air |
| Vapor Pressure: N.A. | Freezing Point N.A. |
| Odor Threshold: N.A. | Melting Point N.A |
| Odor Description: Mild Aromatic | Low Boiling Point 150 °C |
| pH: N.A | High Boiling Point N.A |
| Water Solubility: Reacts with Water | Auto Ignition Temp N.A |
| Flammability: N.A. | Decomposition Pt N.A. |
| Flash Point Symbol: N.A | Evaporation Rate: Slower than ether |
| Flash Point 94 °C | Coefficient Water/Oil N.A. |



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SECTION 10) STABILITY AND REACTIVITY

Stability: Material is stable at standard temperature and pressure.

Conditions to Avoid: Heat, high temperature, open flame, sparks, and moisture. Contact with incompatible materials in a closed system will cause liberation of carbon dioxide and buildup of pressure.

Hazardous Reactions/Polymerization: Will not occur under normal conditions but under high temperatures above 204°C, in the presence of moistures, alkalis, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

Incompatible Materials: This product will react with any material containing active hydrogens, such as water, alcohol, ammonia, amines, alkalis and acids, the reaction with water is slow under 50°C, but is accelerated at higher temperature and in the presence of alkalis, tertiary amines, and metal compounds. Some reactions can be violent. Material can react with strong oxidizing agents.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, nitrogen oxides, trace amounts of hydrogen cyanide and unidentified organic compounds may be formed during combustion.

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation: Isocyanates react with skin protein and moisture and can cause irritation. Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and, in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor. Causes skin irritation

Serious Eye Damage/Irritation: Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. Prolonged vapor contact may cause conjunctivitis. Any level of contact should not be left untreated. Causes serious eye irritation.

Carcinogenicity: Suspected of causing cancer.

Respiratory/Skin Sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ Cell Mutagenicity: No data available

Reproductive Toxicity: No data available

Specific Target Organ Toxicity - Single Exposure: High vapor concentrations may cause central nervous system (CNS) depression as evidenced by giddiness, headache, dizziness, and nausea. Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). As a result of previous repeated overexposures or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. May cause respiratory irritation.

Specific Target Organ Toxicity - Repeated Exposure: Chronic overexposure to isocyanate has also been reported to cause lung damage (including decrease in lung function) which may be permanent. May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: No data available

Acute Toxicity: No data available

| 0000101-68-8 4,4'-METHYLENEDIPHENYL DIISOCYANATE | 0009016-87-9 POLYMETHYLENE POLYPHENYL ISOCYANATE |
|--|--|
| LC50 (rat): 369-490 mg/m ³ (aerosol) (4-hour exposure) (1) | LC50 (rat): 490 mg/m ³ (aerosol) 4-hour exposure (22) |
| LC50 (rat): 178 mg/m ³ (17.4 ppm) (duration of exposure not reported) (2) | LD50 (oral, rat): greater than 10000 mg/kg (PMPPI) (2) |
| LD50 (oral, rat): greater than 10,000 mg/kg (1,2) | LD50 (dermal, rabbit): greater than 5 mL/kg (6200 mg/kg) (PMPPI) (2) |
| LD50 (dermal, rabbit): greater than 10,000 mg/kg (1) | |
| LD50 (oral, mouse): 2,200 mg/kg (3) | |



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SECTION 12) ECOLOGICAL INFORMATION

Toxicity: No data available

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal: Under RCRA, it is the responsibility of the user of the product, to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14) TRANSPORTATION INFORMATION

U.S. DOT Information: Not regulated **IMDG Information:** Not regulated. **IATA Information:** Not regulated.

SECTION 15) REGULATORY INFORMATION

| CAS | Chemical Name | % By Weight | Regulation List |
|--------------|--|-------------|--|
| 0068515-48-0 | PHTHALATE ESTERS | 26% - 48% | DSL,CERCLA,SARA312,TSCA |
| 0009016-87-9 | POLYMETHYLENE POLYPHENYL ISOCYANATE | 20% - 38% | DSL,SARA312,SARA313,VOC,TSCA |
| 0000101-68-8 | 4,4'- METHYLENEDIPHENYL DIISOCYANATE | 15% - 27% | DSL,CERCLA,HAPS,SARA312,SARA313,VHAPS,VOC,TSCA |
| 0026447-40-5 | MDI (MONOMER) | 5% - 8% | DSL,SARA312,TSCA |

SECTION 16) OTHER INFORMATION

OTHER INFORMATION: Note: As per GHS, category 1 is the greatest level of hazard within each class.

GLOSSARY: ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TD Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC-Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)-Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ - Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA - Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

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