

MATERIAL SAFETY DATA SHEET



Date Issued: 11/04/2009

MSDS No: 1364

Date Revised: 11/04/2009

Revision No: 5

MIRACLE-Kingco PF96 Duct Liner Adhesive (item #053, 054, 055, & G31)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MIRACLE-Kingco PF96 Duct Liner Adhesive (item #053, 054, 055, & G31)

MANUFACTURER

ITW TACC

56 Air Station Industrial Park

Rockland MA 02370

Product Stewardship: (781) 878-7015

Service Number: (800) 503-6991

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (US Transportation): (800) 424-9300

2. HAZARDS IDENTIFICATION

HAZARD DESIGNATION

"F" - Highly flammable

"Xn" - Harmful

"N" - Dangerous for the environment

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: DANGER! Extremely flammable liquid and vapor. Vapor may cause flash fire and explosion. Harmful or fatal if swallowed. Harmful if absorbed through the skin. Pulmonary aspiration hazard. After ingestion, may enter lungs and produce damage. High vapor concentrations may cause drowsiness. Can cause eye, skin and respiratory tract irritation.

POTENTIAL HEALTH EFFECTS

EYES: Can cause severe eye irritation and corneal damage.

SKIN: Causes defatting and skin irritation. Can cause dermatitis.

SKIN ABSORPTION: May be absorbed through the skin in harmful amounts.

INGESTION: Can cause gastrointestinal irritation, nausea and vomiting. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Harmful or fatal if swallowed.

INHALATION: May cause nose or throat irritation. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Liquid and vapor can severely irritate the eyes depending on type of exposure (splash, vapor) and exposure time.

SKIN: Mild to moderate skin irritant.

SKIN ABSORPTION: May be absorbed through the skin and can contribute to overall exposure. Effects are similar to CNS depression.

INGESTION: May result in central nervous system (CNS) depression with symptoms such as headaches, nausea, vomiting, diarrhea, dizziness, incoordination and unconsciousness. Aspiration of material into lungs may cause chemical pneumonitis which can be fatal.

INHALATION: High vapor concentrations may cause CNS depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation,

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reduced appetite, confusion, and unconsciousness.

ACUTE TOXICITY: High vapor concentrations may cause central nervous system (CNS) depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation, reduced appetite, confusion and unconsciousness.

CHRONIC EFFECTS: Damage to the nervous system of the extremities, peripheral neuropathy, with symptoms including numbness, tingling and weakness in the toes and fingers, sensory impairment to touch, pain, vibration and temperature, muscular weakness, blurred vision, coldness of extremities, loss of body weight and reflexes, and even paralysis. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

CARCINOGENICITY: None known.

MUTAGENICITY: None known.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: None known.

TERATOGENIC EFFECTS: None known.

ROUTES OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, and Skin Contact

TARGET ORGAN STATEMENT: Central Nervous System (CNS)

IRRITANCY: Eyes, nose, throat, respiratory tract, and skin irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS	EINECS	Classification
n-Hexane	15 - 40	000110-54-3	203-777-6	F,Xn,N; 11-38-48/20-62-65-67-51/53
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	10 - 30	064742-89-8	265-192-2	Xn; 65
n-Heptane	10 - 30	000142-82-5	265-192-2	F,Xi,N; 11-38-50/53-65-67
Cyclohexane	3 - 10	000110-82-7	203-806-2	F; 11
Cyclopentane	1 - 5	000287-92-3	206-016-6	F; 11

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of tempered water (at least 15-20 minutes) lifting upper and lower eye lids occasionally. Get immediate medical attention.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash or dispose of clothing before reuse.

INGESTION: Do not induce vomiting, keep person warm, quiet and get medical attention immediately. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Aspiration of this material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained

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personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: -37°C (-35°F) TAG CC

FLAMMABLE LIMITS: 1.1 to 8.6

AUTOIGNITION TEMPERATURE: 204°C (47.3°F) to 361°C

FLAMMABLE CLASS: Class IB

GENERAL HAZARD: Flammable liquid and vapor.

EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide, water spray or fog.

HAZARDOUS COMBUSTION PRODUCTS: Carbon Monoxide, Carbon Dioxide, Aldehydes

EXPLOSION HAZARDS: Avoid fire, sparks, static electricity and hot surfaces. Liquid readily evaporates at room/ambient temperature. Vapors are invisible, flammable, heavier than air, and may accumulate in low areas and spread long distances. Distant ignition and flashback are possible.

FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus with pressure-demand, full face piece SCBA (MSHA/NIOSH approved or equivalent) and full protective gear.

SENSITIVE TO STATIC DISCHARGE: Likely to catch fire from near-by spark. Static charge may accumulate by flow or agitation. Grounding and bonding of containers is required.

SENSITIVITY TO IMPACT: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide and Carbon Dioxide may form when heated to decomposition.

6. ACCIDENTAL RELEASE MEASURES

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 closed containers 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 mechanical 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.

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7. HANDLING AND STORAGE

GENERAL PROCEDURES: 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. Turn off all pilot lights, flames, stoves, heaters, electric motors, welding equipment and other sources of ignition. 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. Flammable vapors may cause flash fire or ignite explosively. To prevent build-up of vapors, use adequate natural and/or mechanical ventilation (e.g. open all windows and doors to achieve cross ventilation). Containers may be hazardous when empty. Never use welding or cutting torch on or near container. Do not cut, drill, grind, or expose containers to heat, sparks, static electricity or other source of ignition. Explosion may occur causing injury or death.

HANDLING: Use adequate ventilation and appropriate respiratory protection to avoid breathing vapors when cover is removed. Ground and bond all equipment when handling flammable solvent-borne material.

STORAGE: Keep container closed when not in use. Store in a dry well ventilated area, out of the sun and away from ignition sources. Do not remove or deface label. Prevent water or moist air from entering container.

STORAGE TEMPERATURE: 15.5°C (60°F) Minimum to 35°C (95°F) Maximum

SHELF LIFE: 1 year from manufacture date

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³
n-Hexane	TWA	500 ppm ^[1]	1800 mg/m ³ ^[1]	50 ppm	176 mg/m ³
	STEL	NL ^[2]	NL ^[2]	NL ^[2]	NL ^[2]
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	TWA	400 ppm	NL	400 ppm	NL
	STEL	NL ^[2]	NL ^[2]	NL ^[2]	NL ^[2]
n-Heptane	TWA	500 ppm ^[1]	2000 mg/m ³ ^[1]	400 ppm	1640 mg/m ³
	STEL	NL ^[2]	NL ^[2]	500 ppm	2050 mg/m ³
Cyclohexane	TWA	300 ppm ^[1]	1050 mg/m ³ ^[1]	100 ppm	334 mg/m ³
	STEL	NL ^[2]	NL ^[2]	NL ^[2]	NL ^[2]
Cyclopentane	TWA	NL ^[2]	NL ^[2]	600 ppm	1720 mg/m ³
	STEL	NL ^[2]	NL ^[2]	NL ^[2]	NL ^[2]
Footnotes: 1. OSHA limits per 29 CFR 1910.1000 Table Z-1 & Z-2 2. NL = Not Listed					

ENGINEERING CONTROLS: Provide sufficient explosion proof mechanical (general and/or local exhaust) ventilation to maintain exposure below the occupational exposure limit and exposure concentration.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields (or goggles) or a full face respirator.

SKIN: Wear chemical protective clothing & boots to prevent repeated or prolonged skin contact.

RESPIRATORY: NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

PROTECTIVE CLOTHING: Wear chemical resistant gloves, such as nitrile rubber.

WORK HYGIENIC PRACTICES: Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Solvent-like

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COLOR: Red**PERCENT VOLATILE:** 67.6**Notes:** by weight**BOILING POINT:** 49.5°C (121°F) to 98°C (209°F)**FLASHPOINT AND METHOD:** -37°C (-35°F) TAG CC**SOLUBILITY IN WATER:** Slight**EVAPORATION RATE:** > 1.0 (n-Butyl Acetate=1)**DENSITY:** 6.33 lbs/gal**SPECIFIC GRAVITY:** 0.759**(VOC):** 513.100 gr/L EPA Method 24 VOC**Notes:** Photochemically Reactive Only VOC: 513.1 gr/L**COMMENTS:** 0.84 lb VHAP/lb Solid

27.1% by weight HAP

10. STABILITY AND REACTIVITY

STABLE: Yes**HAZARDOUS POLYMERIZATION:** No**STABILITY:** Stable.**POLYMERIZATION:** Product will not undergo polymerization.**CONDITIONS TO AVOID:** Avoid fire, sparks, static electricity and hot surfaces.**POSSIBILITY OF HAZARDOUS REACTIONS:** None Expected.**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide and carbon dioxide may form when heated to decomposition.**INCOMPATIBLE MATERIALS:** Strong oxidizing agents, strong acids and strong bases.

11. TOXICOLOGICAL INFORMATION

ACUTE

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Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
n-Hexane	25000 mg/kg	No data	48000 ppm
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	> 2000 mg/kg	> 2000 mg/kg	> 5000 ppm (1-hr dose)
n-Heptane	> 2000 mg/kg	> 2000 mg/kg	> 5000 ppm (1-hr dose)
Cyclohexane	12705 mg/kg	No data	No data
Cyclopentane	11400 mg/kg	No data	106 gr/cub m

CARCINOGENICITY

IARC: Not Applicable**NTP:** Not Applicable**OSHA:** Not Applicable**Notes:** None**IRRITATION:** Eyes, nose, throat, respiratory tract irritation.**CORROSIVITY:** Not Applicable**SENSITIZATION:** Not Applicable**NEUROTOXICITY:** Not Applicable**GENETIC EFFECTS:** Not Applicable**REPRODUCTIVE EFFECTS:** Not Applicable**TERATOGENIC EFFECTS:** Not Applicable**MUTAGENICITY:** Not Applicable

SYNERGISTIC MATERIALS: The neurotoxic effects of n-hexane vapor can be enhanced in rats by both methyl ethyl ketone (MEK) and lead acetate, but are decreased by toluene. Toluene and xylene prevent testicular atrophy by n-hexane.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: This product contains components that will normally float on water. These components may be harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment.

ECOTOXICOLOGICAL INFORMATION: Contains components that are potentially toxic to freshwater and saltwater ecosystems.

BIOACCUMULATION/ACCUMULATION: Contains components with the potential to bio-accumulate.

13. DISPOSAL CONSIDERATIONS

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DISPOSAL METHOD: Dispose of in accordance with all local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Adhesives

PRIMARY HAZARD CLASS/DIVISION: 3

UN/NA NUMBER: 1133

PACKING GROUP: II

NAERG: 128

MARINE POLLUTANT #1: None

OTHER SHIPPING INFORMATION: contains (n-Hexane, n-Heptane)

SPECIAL SHIPPING NOTES: If individual container size is less than 1.3 gallons, the proper shipping name is:

ORM-D Consumer Commodity

Non-Regulated

15. REGULATORY INFORMATION

UNITED STATES

DOT LABEL SYMBOL AND HAZARD CLASSIFICATION



Flammable Liquid

** for containers > 1.3 gallons (4.9 Liters) **

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

EPCRA SECTION 313 SUPPLIER NOTIFICATION

Chemical Name	Wt. %	CAS
n-Hexane	15 - 40	000110-54-3
Cyclohexane	3 - 10	000110-82-7

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt. %	CERCLA RQ
n-Hexane	15 - 40	5,000 lbs.
Cyclohexane	3 - 10	1,000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

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Chemical Name	CAS	TSCA SECTION
n-Hexane	000110-54-3	
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	064742-89-8	
n-Heptane	000142-82-5	12b,
Cyclohexane	000110-82-7	
Cyclopentane	000287-92-3	

CLEAN AIR ACT

Chemical Name	Wt. %	CAS
n-Hexane	15 - 40	000110-54-3

STATES WITH SPECIAL REQUIREMENTS

Chemical Name	Requirements
n-Hexane	New Jersey Right to Know List Pennsylvania Right to Know List Massachusetts Toxic Use Reduction Act (TURA) Reportable Chemical
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	Pennsylvania Right to Know List
n-Heptane	New Jersey Right to Know List Pennsylvania Right to Know List
Cyclohexane	New Jersey Right to Know List Pennsylvania Right to Know List Massachusetts Toxic Use Reduction Act (TURA) Reportable Chemical
Cyclopentane	New Jersey Right to Know List Pennsylvania Right to Know List

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION



Flammable Liquid



Toxic

EUROPEAN COMMUNITY

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EEC LABEL SYMBOL AND CLASSIFICATION



"F" - Highly flammable



"Xn" - Harmful



"N" - Dangerous for the environment

16. OTHER INFORMATION

PREPARED BY: EHS Department

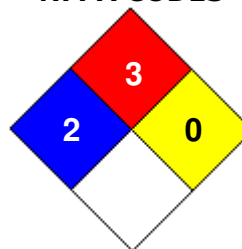
INFORMATION CONTACT: (781) 878-7015

REVISION SUMMARY: Revision #: 5 This MSDS replaces the November 04, 2009 MSDS. Any changes in information are as follows: In Section 1 Date Prepared

HMIS RATING

HEALTH:	*	2
FLAMMABILITY:		3
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:	B	

NFPA CODES



GENERAL STATEMENTS: Keep out of reach of children

For professional or industrial use only

If you cannot read, or do not understand all directions, cautions, and warnings, do not use this product

For spray applications, use only with approved equipment

MANUFACTURER DISCLAIMER:

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