

SAFETY DATA SHEET

Date Prepared : 11/28/2017

MSDS No : 1636

Date Revised : 11/28/2017

Revision No : 44

MIRACLE DSA20 Construction and FRP Adhesive

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MIRACLE DSA20 Construction and FRP Adhesive

MANUFACTURER

ITW Polymers Sealants North America
56 Air Station Industrial Park
Rockland, MA 02370

Product Stewardship: (781) 878-7015

24 HR. EMERGENCY TELEPHONE NUMBERS

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

COMMENTS: MIRACLE is a registered trademark of Illinois Tool Works, Inc.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Skin Irritation, Category 2
Eye Irritation, Category 2A
Respiratory Sensitization, Category 1
Skin Sensitization, Category 1
Mutagenicity, Category 1B
Carcinogenicity, Category 1B
Reproductive Toxicity, Category 2
Target Organ Toxicity (Single exposure), Category 3
Target Organ Toxicity (Repeated exposure), Category 2
Aspiration Hazard, Category 1

Environmental:

Acute Hazards to the Aquatic Environment, Category 2
Chronic Hazards to the Aquatic Environment, Category 2

Physical:

Flammable Liquids, Category 2

GHS LABEL



Flame



Exclamation
mark



Health
hazard



Environment

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H225: Highly flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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H336: May cause drowsiness or dizziness.
 H340: May cause genetic defects.
 H350: May cause cancer.
 H361: Suspected of damaging fertility or the unborn child.
 H373: May cause damage to organs through prolonged or repeated exposure.
 H401: Toxic to aquatic life.
 H411: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENT(S)

Prevention:

[201]: Obtain special instructions before use.
 P202: Do not handle until all safety precautions have been read and understood.
 P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P233: Keep container tightly closed.
 P240: Ground and bond container and receiving equipment.
 P241: Use explosion-proof [electrical/ventilating/lighting] equipment.
 P242: Use non-sparking tools.
 P243: Take action to prevent static discharges.
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.
 P264: Wash thoroughly after handling.
 P271: Use only outdoors or in a well-ventilated area.
 P272: Contaminated work clothing should not be allowed out of the workplace.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P284: [In case of inadequate ventilation] wear respiratory protection.

Response:

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P302+P352: IF ON SKIN: Wash with plenty of water.
 P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P304+P340: IF INHALED: 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.
 P308+P313: IF exposed or concerned: Get medical advice/ attention.
 P312: Call a POISON CENTER/doctor if you feel unwell.
 P314: Get medical advice/attention if you feel unwell.
 P321: Specific treatment is required.
 P331: Do NOT induce vomiting.
 P332+P313: If skin irritation occurs: Get medical advice/attention.
 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/doctor.
 P362: Take off contaminated clothing.
 P370+P378: In case of fire: Use appropriate media to extinguish.
 P391: Collect spillage.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.
 P403+P235: Store in a well-ventilated place. Keep cool.
 P405: Store locked up.

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Disposal:

P501: Dispose of contents/container according to local, regional, national, and international regulations.

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Tan. Viscous. Liquid.

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).

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
n-Hexane	7 - 13	110-54-3
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	3 - 10	64742-89-8
n-Heptane	3 - 10	142-82-5
Cyclohexane	1 - 5	110-82-7
Silica, Crystalline	< 0.5	14808-60-7

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 personnel. Seek immediate medical attention.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

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

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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, reduced appetite, confusion, and unconsciousness.

ACUTE EFFECTS: 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).

5. FIRE FIGHTING MEASURES

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

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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.

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		
Chemical Name	Type	ppm	mg/m ³	
n-Hexane	OSHA PEL	TWA	500 ppm [1]	1800 mg/m ³ [1]
		STEL	NL [2]	NL [2]
	ACGIH TLV	TWA	50 ppm	176 mg/m ³
		STEL	NL [2]	NL [2]
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	OSHA PEL	TWA	400 ppm	NL
		STEL	NL [2]	NL [2]
	ACGIH TLV	TWA	400 ppm	NL
		STEL	NL [2]	NL [2]
n-Heptane	OSHA PEL	TWA	500 ppm [1]	2000 mg/m ³ [1]
		STEL	NL [2]	NL [2]
	ACGIH TLV	TWA	400 ppm	1640 mg/m ³
		STEL	500 ppm	2050 mg/m ³
Cyclohexane	OSHA PEL	TWA	300 ppm [1]	1050 mg/m ³ [1]
		STEL	NL [2]	NL [2]
	ACGIH TLV	TWA	100 ppm	334 mg/m ³
		STEL	NL [2]	NL [2]
Silica, Crystalline	OSHA PEL	TWA	NL	0.1 mg/m ³
		STEL	NL [2]	NL [2]
	ACGIH TLV	TWA	NL	0.05 mg/m ³
		STEL	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. Wear

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impervious gloves, if needed, 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: Use good hygiene practices when handling this material. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Solvent-like

ODOR THRESHOLD: Not Determined

COLOR: Tan

pH: Not Determined

PERCENT VOLATILE: 27.9

Notes: by weight

FLASHPOINT AND METHOD: -23°C (-9.4°F)

FLAMMABLE LIMITS: 1.1 to 8.7

AUTOIGNITION TEMPERATURE: (437°F) to (682°F)

VAPOR PRESSURE: Not Determined

VAPOR DENSITY: Not Determined

BOILING POINT: 64°C (120.7°F) to 90°C (194°F)

FREEZING POINT: Not Determined

MELTING POINT: Not Determined

POUR POINT: Not Determined

SOLUBILITY IN WATER: Slight

PARTITION COEFFICIENT: N-OCTANOL/WATER: Not Determined

EVAPORATION RATE: > 1.0 (n-Butyl Acetate=1)

DENSITY: 9.61 lbs/gal

PARTICLE SIZE: Not Determined

SPECIFIC GRAVITY: 1.153

VISCOSITY: Not Determined

MOLECULAR WEIGHT: Not Determined

(VOC): 322.1 gr/L EPA Method 24 VOC

Notes: Photochemically Reactive Only VOC: 322.1 gr/L

OXIDIZING PROPERTIES: Not Determined

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COMMENTS: 0.15 lb VHAP/lb Solid
 11.0% by weight HAP

10. STABILITY AND REACTIVITY

REACTIVITY: Yes

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

STABILITY: Stable.

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 TOXICITY

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
n-Hexane	25000 mg/kg	No data	48000 ppm (4-hr dose)
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	> 2000 mg/kg	> 2000 mg/kg	> 5000 ppm (1-hr dose)
n-Heptane	> 15000 mg/kg	> 2001 mg/kg	103000 mg/cub m (4-hr dose)
Cyclohexane	29820 mg/kg	No data	No data
Silica, Crystalline	No data	No data	No data

SERIOUS EYE DAMAGE/IRRITATION: Eyes, nose, throat, respiratory tract irritation.

CARCINOGENICITY

Chemical Name	NTP Status	IARC Status
Silica, Crystalline	1	1

IARC: IARC has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)."

NOTES: This product contains silica quartz, a chemical known to the State of California to cause cancer.

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.

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

13. DISPOSAL CONSIDERATIONS

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)

15. REGULATORY INFORMATION

UNITED STATES

DOT LABEL SYMBOL AND HAZARD CLASSIFICATION



Flammable
Liquid

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	7 - 13	110-54-3
Cyclohexane	1 - 5	110-82-7

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
n-Hexane	7 - 13	5,000 lbs.
Cyclohexane	1 - 5	1,000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

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Chemical Name	CAS	TSCA SECTION
n-Hexane	110-54-3	
Low Boiling Point Naphtha - Solvent Naphtha (petroleum), Light Aliph.	64742-89-8	
n-Heptane	142-82-5	12b,
Cyclohexane	110-82-7	
Silica, Crystalline	14808-60-7	

CLEAN AIR ACT

Chemical Name	Wt.%	CAS
n-Hexane	7 - 13	110-54-3

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
Silica, Crystalline	New Jersey Right to Know List Pennsylvania Right to Know List Massachusetts Toxic Use Reduction Act (TURA) Reportable Chemical

CALIFORNIA PROPOSITION 65

Chemical Name	Wt.%	Listed
Silica, Crystalline	< 0.5	Cancer

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION



Flammable
Liquid



Toxic

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16. OTHER INFORMATION

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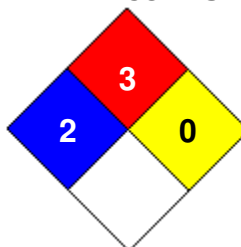
INFORMATION CONTACT: (781) 878-7015

REVISION SUMMARY: This MSDS replaces the 05/31/2016 MSDS. Revised: **Section 1:** Date Issued.

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

MANUFACTURER DISCLAIMER: This document may be used to comply with OSHA's Hazardous Communication Standard, 29 CFR 1910.1200.

To the best of our knowledge, the information contained in this SDS is accurate. It is intended to assist the user in his/her evaluation of the product's hazards and safety precautions to be taken in its use. The data in this SDS relate only to the specific material designated herein. We do not assume liability for the use of, or reliance on this information, nor do we guarantee its accuracy or completeness.

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