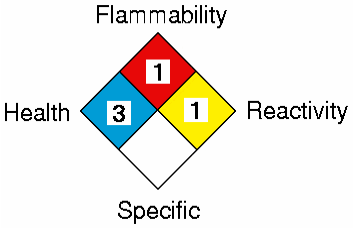
Material Safety Data Sheet (MSDS)

34-37.5% Formaldehyde, 0-10% Methanol
DBWT Formaldehyde No. 003

Effective Date: 07-26-04

DBWT PRODUCT CODE: F37A00-F37A01, F37C00-F37C01, F37D00, F37G00, F35A01



Section 1. Chemical Product and Company Identification	
Product / Trade Name Synonyms:	DBWT Product Code: F37A00-F37A01, F37C00-F37C01, F37D00, F37G00, F35A01; Formaldehyde, Aqueous; Methyleneoxide solution; Methyl aldehyde solution; ASTM D2378
Chemical Family:	Aldehyde
Molecular Formula:	CH_2O
Manufacturer:	**D.B. Western, Inc. – Texas** 12511 Strang Road LaPorte,TX 77572 Non-Emergency Phone ONLY: 1-541-756-0533
Emergency Phone (24 hours):	**CHEMTREC 1-800-424-9300**

Section 2. Composition and Information on Ingredients

Hazardous Components	CAS No.	% by Weight	NIOSH No.	STCC Code	ACGIH TLV	OSHA PEL
Formaldehyde	50-00-0	34-37.5	LP8925000	496 6365	CEIL: 0.3 ppm	TWA: 0.75 ppm STEL: 2 ppm
Methanol	67-56-1	0-10	PC1400000	490 9230 490 9237 490 9377 490 9378 490 9379 490 9380 490 9381 491 0499	TWA: 200 ppm STEL: 250 ppm	TWA: 200 ppm STEL: 250 ppm

[skin] This notation indicates that absorption through skin can contribute significantly to overall exposure.
TWA's are 8 hour exposures unless otherwise noted. STEL's are 15 minute exposures unless other wise noted.

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Section 3. Hazards Identification

HMIS	**Health Hazard 3 (High)** **Fire Hazard 1 (Slight)** **Reactivity 1 (Slight)** **Chronic – See *Section 11***	**Note:** Personal protective equipment (PPE) is related to conditions of use. Determination of PPE is the responsibility of the employer. Refer to *Section 8* (Personal Protection and Exposure Controls) of this MSDS for recommendations.
HEALTH – *SIGNAL WORD*	***WARNING!*** *This material is a "health hazard"and/or a "physical hazard" as determined when reviewed according to the requirements of OSHA 29 CFR 1910.1200"Hazard Communication" Standard.*	
Emergency Overview	Colorless, clear to slightly hazy liquid; pungent, irritating odor. CAUTION! **Combustible liquid.** Keep away from heat, sparks, and flames. Vapors can travel to a source of ignition and flash back. Unvented containers may develop pressure on prolonged exposure to heat. Harmful if inhaled. Inhalation of vapors of mist can cause severe respiratory irritation. May be harmful if absorbed through skin. Eye and skin irritation or injury may result from exposure to this product. Vapors are extremely irritating to the eyes and mucous membranes. May cause allergic skin reaction. Harmful if swallowed. **The NIOSH IDLH for Formaldehyde is: 20 ppm; and for Methanol it is: 6,000 ppm**	
Potential Health Effects		
Eye contact:	Contact with liquid or mist can cause severe eye irritation or injury. Vapors released from product can cause severe eye irritation. Symptoms may include redness, watering, itching, swelling, or a burning sensation in the eyes.	
Skin Contact:	A prolonged single exposure can produce severe skin irritation or injury. Symptoms may include itching, scaling, cracking, reddening, or blistering at the site of contact. Exposure to this product may cause an allergic skin reaction. This product may be absorbed through the skin in harmful amounts.	
Inhalation:	This product may be toxic by inhalation. Inhalation of vapors or mist can cause severe respiratory irritation. Vapors released from product may be irritating to the nose, mouth, mucous membranes, throat, and lungs. Symptoms may include a burning sensation, coughing, shortness of breath, nausea, chest pain, or headaches. Can cause central nervous system depression. Severe over-exposure may produce lung damage, choking, unconsciousness, or death. Exposure may cause an allergic respiratory reaction in some individuals.	
Ingestion:	This product is orally toxic and may be harmful or fatal if swallowed. However, in normal industrial use, ingestion is not considered a probable route of exposure. May cause irritation or burns to mucous membranes, esophagus or GI tract characterized by nausea, vomiting, abdominal pain and/or diarrhea. Ingestion of this product may cause irreversible visual impairment or blindness.	
Chronic:	Formaldehyde may cause cancer based on animal data. Repeated or prolonged exposure to formaldehyde may cause skin sensitization, dermatitis, or other allergic reactions. The degree of sensitivity varies with individuals. This substance is known to the State of California to cause cancer.	
	This product contains ingredients which may affect the following target organs: **respiratory system, eyes, skin, nasopharyngeal cavity**	
	See *Section 11* Toxicological Information for additional information.	

Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if worn. Hold eyelids apart and flush eyes with water for at least 15 minutes. Get immediate medical attention.
Skin Contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water for a least 15 minutes. Get medical attention if irritation persists. Launder contaminated clothing and shoes before reuse.
Inhalation	Remove to fresh air immediately. Keep affected person warm and at rest in a half-upright position. Get medical attention if necessary. If not breathing, give artificial respiration or forced air. If breathing is difficult, oxygen should be administered by trained personnel. Get immediate medical attention.

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Ingestion	If conscious, immediately rinse mouth and induce vomiting, drink a tablespoon of salt in a glass of warm water and repeat until vomit fluid is clear. Immediately contact poison control center or hospital emergency room. Never give anything by mouth to an unconscious person.

Section 5. Fire and Explosion Data

Fire Hazards	Corrosive liquid - Acid.			
Product Description	**35% Formaldehyde 1.0% max. Methanol**	**37% Formaldehyde 1.5% max. Methanol**	**37% Formaldehyde 8.0% max. Methanol**	**37% Formaldehyde 10.0% max. Methanol**
Flash Point	Approx. 180°F(82.2°C) [Pensky-Martens Closed Cup]	Approx. 185°F(85°C) [Pensky-Martens Closed Cup]	Approx. 152°F(66.7°C) [Pensky-Martens Closed Cup]	Approx. 150°F(65.6°C) [Pensky-Martens Closed Cup]
Explosion Limits (% by volume)	Formaldehyde (gas) LOWER: 7 UPPER: 73 Methanol LOWER: 5.5 UPPER: 44			
Extinguishing Media	Use alcohol foam, carbon dioxide, dry chemical, or water spray.			
Fire Fighting Instructions	Use self contained breathing apparatus (SCBA) and complete protection for skin (PPE). Use water spray to cool fire exposed containers and to absorb evolved gaseous formaldehyde.			
Combustion Products	Irritating fumes and toxic gases.			
Flammability Classification:	Corrosive Liquid, Class 8			
Special Hazards	• CAUTION: Vapors can travel to a source of ignition and flash back. • Unvented containers can build up pressure if exposed to heat (fire) and rupture violently. • Irritating gaseous formaldehyde is evolved from hot solutions. • Water runoff can cause environmental damage. Dike and collect water used to fight fire.			

Section 6. Accidental Release Measures

Spill and Leak Procedures	• Evacuate spill area. • Turn off all sources of heat or ignition. Empty containers may contain explosive vapors. DO NOT cut, puncture or weld on or nearby. • Stop leak if you can do so without risk. • Ventilate area with explosion-proof equipment ONLY. • Use PPE appropriate to spill size and risk of exposure. • Confine spillage and absorb on earth, sand, or other non-combustible absorbent material. • Uncontaminated spilled material may be reused. • Neutralize the area with sodium sulfite, sodium bisulfite, a dilute ammonia solution, or a dilute calcium hydroxide (lime) and flush with water. DO NOT flush to sewer. • Retain all contaminated liquid for removal and treatment. Absorb residue and discard according to Federal, State and Local Regulations. • If the spill is 1,000 lbs. or greater, call The National Response Center at 1 (800) 424-9346. (EPA hazardous waste number under RCRA for formaldehyde is U122, 40CRF261)

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Section 7. Handling and Storage

Handling

- Combustible liquid. Avoid contact with eyes, skin, and clothing. Use proper protective equipment. (*see Section 8*)
- Avoid breathing mist or vapor. Use only in a well ventilated area.
- Ground and bond containers when transferring material. Use explosion-proof pumps.
- Unvented containers may develop pressure. Open with caution.
- Wash thoroughly after handling.
- Eye wash stations and safety showers should be easily accessible to areas where product is used.

Storage

- Keep away from heat, sparks, open flame, or other sources of ignition.
- Do not store portable containers in direct sunlight.
- Keep containers closed when not in use.
- For maximum storage life, store at temperatures between:

35% Formaldehyde 1.0% max. Methanol	37% Formaldehyde 1.5% max. Methanol	37% Formaldehyde 8.0% max. Methanol	37% Formaldehyde 10.0% max. Methanol
95 – 122ºF (35 – 50ºC)	95 – 122ºF (35 – 50ºC)	68 – 95ºF (20 – 35ºC)	64 – 91ºF(17.8 – 32.8ºC)

- Protect from freezing.
- Small containers should be protected from physical damage.
- Store away from incompatible materials. (*see Section 10*)

Section 8. Personal Protection and Exposure Controls

Personal Protective Equipment (PPE)

Eyes and face: Face shield with safety glasses or chemical safety goggles as cited in 29CFR 1910.1048.

Skin: Butyl rubber or neoprene gloves. Wear additional protective clothing as appropriate to protect skin. Chemical resistant apron or other impervious clothing, full protective suit (rain-suit), Butyl rubber boots.

Respiratory: If feasible engineering controls do not prevent overexposure, a full-face respirator with cartridges approved by NIOSH/MSHA for formaldehyde may be used only when exposure levels are known to be within the unit's capability.
Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any situation where air purifying respirators may not provide adequate protection.
Observe the OSHA respirator regulations cited in 29 CFR 1910.134.

Engineering Controls

Use ventilation as necessary to keep exposure to airborne contaminants below the exposure limits (TLV's and PEL's). Refer to *Section 2*.
Use explosion-proof ventilation equipment.
Detached storage is preferred.
Indoor storage areas should be sloped toward a drain or retention area.

Section 9. Physical and Chemical Properties

Product Description	**35% Formaldehyde 1.0% max. Methanol**	**37% Formaldehyde 1.5% max. Methanol**	**37% Formaldehyde 8.0% max. Methanol**	**37% Formaldehyde 10.0% max. Methanol**
Formaldehyde Content:	35.0 %	37.0 %	37.0 %	37.0 %
Methanol Content:	1.0 % max.	1.5 % max.	8.0 % max.	10.0 % max.
Specific Gravity:	Approx. 1.09 @ 25°C	Approx. 1.11 @ 25°C	Approx. 1.10 @ 25°C	Approx. 1.09 @ 25°C
Density (pounds/gallon)	Approx. 9.24 @ 25°C	Approx. 9.24 @ 25°C	Approx. 9.16 @ 25°C	Approx. 9.07 @ 25°C
Physical appearance:	Colorless, clear to slightly hazy viscous liquid	Colorless, clear to slightly hazy viscous liquid	Colorless, clear to slightly hazy viscous liquid	Colorless, clear to slightly hazy viscous liquid
Odor:	Pungent, irritating	Pungent, irritating	Pungent, irritating	Pungent, irritating
pH (as is):	2.0 – 4.0	2.0 – 4.0	2.0 – 4.0	2.0 – 4.0
Boiling Point:	Approx. 210°F (98.9°C) @ 1 atm	Approx. 210°F (98.9°C) @ 1 atm	Approx. 210°F (98.9°C) @ 1 atm	Approx. 210°F (98.9°C) @ 1 atm
Vapor Pressure:	24 mm Hg @ 77°F(25°C)	24 mm Hg @ 77°F(25°C)	24 mm Hg @ 77°F(25°C)	24 mm Hg @ 77°F(25°C)
Vapor Density (air=1):	Approx. 1.03	Approx. 1.03	Approx. 1.03	Approx. 1.03
% Volatiles by Weight:	Approx. 100%	Approx. 100%	Approx. 100%	Approx. 100%

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Solubility in Water:	Soluble	Soluble	Soluble	Soluble
Evaporation Rate:	Similar to Water	Similar to Water	Similar to Water	Similar to Water

Section 10. Stability and Reactivity Data	
Chemical Stability	This product is stable under the recommended storage conditions.
Conditions to Avoid	Avoid storage at temperatures above or below the recommended storage temperature. (see *Section 7*)
Incompatibility with Other Materials	Avoid contact or contamination with strong oxidizers, phenol, caustics, isocyanantes and inorganic acids, alkalies. (Reaction with hydrochloric acid may form bis-chloromethyl ether, an OSHA regulated carcinogen.)
Hazardous Decomposition Products	None known, but may include Carbon Monoxide and Carbon Dioxide. When heated to decomposition, Oxygen from the air can oxidize formaldehyde to formic acid. Formic Acid is corrosive!
Hazardous Polymerization	Hazardous polymerization will not occur.
Special Remarks	Prolonged storage or cooling may cause a non-hazardous self-polymerization to form paraformaldehyde which precipitates out of solution. (Methanol content is added as a stabilizer.) The contact of formaldehyde with strong bases such as caustic soda may cause a violent exothermic reaction and splattering. This product is sensitive to static discharge.

Section 11. Toxicological Information	
Eye	Contact with liquid or mist can cause severe eye irritation and/or injury.
Formaldehyde:	EYE: Rabbit, 750 ug (24 hours); severe irritation; Human, 4ppm (6 min) mild irritation
Methanol:	EYE: Rabbit, moderate irritation;
Dermal	A prolonged single exposure can produce severe skin irritation or injury. The dermal toxicity of this product is not known.
Formaldehyde:	DERMAL (LD_{50}): Rabbit, 270 mg/kg
Methanol:	DERMAL (LD_{50}): Rabbit, 400-2000 mg/kg
Inhalation	This product may be toxic by inhalation. Inhalation of vapors or mist can cause serious burns or the entire respiratory tract.
Formaldehyde:	VAPOR (LD_{50}): Rat, 477 ppm (LC_{LO}): Cat, 400 ppm [2 hrs] (LD_{50}): Rat, 590 ppm [4 hrs]
Methanol:	VAPOR (LD_{50}): Rat, 0.3g to 1 g /kg
Oral	This product is orally toxic and may be harmful or fatal if swallowed.
Formaldehyde:	ORAL (LD_{LO}): Woman, 108 mg/kg (LD_{50}): Rat, 800 mg/kg
Methanol:	ORAL (LD_{50}): Rat, 6.2-13 g/kg (LD_{50}): Mouse, 400 mg/kg
Sub chronic Effects	**Formaldehyde -** Formaldehyde can cause watery eyes, burning sensations in the eyes and throat, nausea, and difficulty in breathing in some humans exposed at elevated levels (above 0.1 parts per million). High concentrations may trigger attacks in people with asthma. There is evidence that some people can develop a sensitivity to formaldehyde. It has also been shown to cause cancer in animals and may cause cancer in humans. Health effects include eye, nose, and throat irritation; wheezing and coughing; fatigue; skin rash; severe allergic reactions. **Methanol -** Exposure may occur from ambient air and during the use of solvents. Acute (short-term) or chronic (long-term) exposure of humans to methanol by inhalation or ingestion may result in blurred vision, headache, dizziness, and nausea.
Chronic Effects	

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Carcinogenicity	**Formaldehyde** - Epidemiological studies of workers exposed to formaldehyde have failed to consistently identify an association between formaldehyde exposure and cancer. In animal studies, rats and mice exposed to high levels of formaldehyde developed nasal cancer while hamster did not. These exposure levels are far above those expected to be found in the workplace. These animals studies provide an inference of carcinogenicity, this effect may require exposure to concentrations that humans could not tolerate. Formaldehyde is listed by the International Agency for Research on Cancer (IARC) as a known human carcinogen (Group 1). The National Toxicology Program has included formaldehyde in its Annual Report on Carcinogens. OSHA regulates formaldehyde as a potential carcinogen for exposures at or exceeding 0.5 ppm. This substance is known to the State of California to cause cancer. **Methanol** – Methanol is not listed as a carcinogen by IARC, NTP, ACGIA or OSHA.
Target Organs	See *Section 3*.

Section 12. Ecological Information

Biodegradability	Product is easily biodegradable.
Ecotoxicity	Formaldehyde may pollute water bearing stratum when penetrating into soil in large quantities. LC50 aq.: >10 mg/l (fish).

Section 13. Disposal Considerations

Waste Disposal	RECOVER FREE LIQUID. ABSORB RESIDUE AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. SARA 313: YES-FORMALDEHYDE, 34-37.5%, CAS# 50-00-0; METHANOL, 0-10%, CAS# 67-56-1.
RCRA	Formaldehyde (U122) is considered a hazardous waste if and when it is discarded. Methanol (U154) is considered a hazardous waste if and when it is discarded. **Note:** If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.

Section 14. Transportation Information

DOT	Regulated	
Shipping Description	**Bulk Shipments (Rail Cars/Tank Trucks)**	**Non-bulk Shipments (Drums/Totes Bins)**
Proper Shipping Name	Formaldehyde solutions	Formaldehyde solutions
Hazard Class	8	8
Identification Number	UN 2209	UN 2209
Packing Group	III	III
Reportable Quantities	RQ (Formaldehyde) 100 pounds	RQ (Formaldehyde) 100 pounds
Placards / Labels	Placards: Corrosive	Labels: Corrosive
Special Provisions for Transport	FOR BULK INTERNATIONAL SHIPMENTS Other possible Names: "Combustible liquid, n.o.s. (Formaldehyde) NA 1993". (domestic bulk shipments only)	FOR BULK INTERNATIONAL SHIPMENTS Other possible Names: RQ's may not apply to smaller quantity shipments. For air shipments, use "Aviation regulated liquid, n.o.s. UN 3334" or consult the IATA regulations.

Section 15. Regulatory Information

Federal Regulations	The following regulations may have reporting requirements for the components listed. See "Key to Abbreviations and Acronyms" under Section 16 for definitions.
CERCLA / SARA Emergency Reporting	A spill or release of this material may trigger the emergency release reporting requirements under CERCLA (40 CFR Part 300) and/or SARA Title III (40 CFR Part 355). State or local reporting requirements may differ from federal requirements. Consult counsel for further guidance on your responsibilities under these laws. **Formaldehyde, Methanol**

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SARA Title III Section 302/Section 313 Supplier Notification	This product is known to contain the following chemicals which are listed in 40 CFR 372.65 as toxic chemicals requiring notification. This information must be included in all MSDS's that are copied and distributed for this product. **Components** — **CAS #** — **% by Weight** **Formaldehyde** — **50-00-0** — **34-37.5** **Methanol** — **67-56-1** — **0-10 max.**
CWA Section 311	The following chemicals are listed under Section 311 as hazardous substances requiring the submission of a National Pollutant Discharge Elimination System (NPDES) permit application to EPA. **Formaldehyde**
TSCA	All components of this product are listed on the Toxic Substances Control Act Inventory or are excluded from listing requirements.
RCRA Federal hazardous waste regulation	The requirements of the federal hazardous waste regulations do not apply unless the waste fails to pass any of EPA's four tests for determining hazardous wastes. Note: If this product is altered, it is the responsibility of the user to determine whether the material meets the criteria for hazardous waste at the time of disposal.
Other Regulations	See the OSHA Formaldehyde Standard 29 CFR 1910.1048 for worker training, workplace monitoring, and medical surveillance requirements.
	California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This Product contains the following substance(s) known to the State of California to cause cancer: **Formaldehyde** Clean Air Act (CAA) 112 accidental release prevention: **Methanol**

Section 16. Other Information

Other Special Considerations:	**CAUTION! :** Empty containers may contain product residue. Continue to observe recommended safety precautions when handling empty containers.
Supersedes Date:	7-12-04
Section(s) Changed Since Last Revision:	11, changed from suspected to known carcinogen by IARC
Key to Abbreviations and Acronyms	ACGIH - American Conference of Governmental Industrial Hygienists ANSI - American Standards Institute CEIL - Ceiling Value CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act CFR - Code of Federal Regulations CWA - Clean Water Act DOT - Department of Transportation FDA - Food and Drug Administration HCS - Hazard Communication Standard HMIS - Hazardous Materials Information System IARC - International Agency for Research on Cancer IDLH - Immediately Dangerous to Life and Health LC50 - The concentration of a material expected to kill 50% of an animal test group. LCLO - Lowest lethal concentration of a substance LD50 - The dose of a material expected to kill 50% of an animal test group. LDLO - Lowest lethal dose of a material MSHA - Mine Safety and Health Administration N.O.S. - Not Otherwise Specified NFPA - National Fire Protection Association NIOSH - National Institute for Occupational Safety and Health NTP - National Toxicology Program OSHA - Occupational Safety and Health Administration PEL - Permissible Exposure Limit (OSHA)

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PPE	-	Personal Protective Equipment
RCRA	-	Resource Conservation and Recovery Act
RQ	-	Reportable Quantity
SARA	-	Superfund Amendments and Reauthorization Act
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short Term Exposure Limit
TLV	-	Threshold Limit Value (recommended by ACGIH)
TSCA	-	Toxic Substances Control Act
TWA	-	Time weight Average

Disclaimer:

Seller makes no warranty, expressed or implied, concerning the product or the merchantability or fitness there of for any purpose or concerning the accuracy of any information provided by seller, except that the product shall conform to contracted specifications, and that the product does not infringe any valid United States patent. The information provided herein was believed by Seller to be accurate at the time of preparation or prepared from sources believed to be reliable but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract breach of warranty, negligence or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

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