

Burdick & Jackson***Material Safety Data Sheet*****50/50 Dimethylformamide/Dichloromethane****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: 50/50 Blend of Dichloromethane and N,N-Dimethylformamide (v/v)

OTHER/GENERIC NAMES: Mixture of Methylene Chloride(DCM) and Dimethyl Formamide(DMF)

PRODUCT USE: Solvent

MANUFACTURER: Honeywell, Burdick & Jackson
1953 South Harvey Street
Muskegon, MI 49442

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm)
1-800-368-0050

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-800-707-4555 or Chemtrec 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Methylene Chloride	75-09-2	50%
N,N-Dimethylformamide	68-12-2	50%

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Toxic! Combustible! A clear colorless liquid with a mild chloroform-like odor. It is highly toxic and a suspected carcinogen. Its toxic effects can be exerted through inhalation, ingestion, and skin/tissue absorption.

POTENTIAL HEALTH HAZARDS

SKIN: Can cause irritation and dermatitis. If liquid remains on skin, can cause skin burns. Quickly absorbed through the skin and may produce systemic effects similar to symptoms of inhalation.

EYES: Can cause irritation and pain. Corneal injury is possible.

INHALATION: Inhalation causes mental confusion, light-headedness, nausea, vomiting and headache. Unconsciousness and death can result from extreme cases of over exposure. Breathing vapors can elevate carboxyhemoglobin levels in the cardiovascular system. Persons who smoke tobacco products will experience an intensified elevation of carboxyhemoglobin levels.

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INGESTION: Expect same symptoms as inhalation. Can cause burning sensation and do damage to throat and mouth tissue.

DELAYED EFFECTS: Exposure may aggravate symptoms of angina (chest pains). Liver and kidney damage may occur. Methylene Chloride is an animal carcinogen.

Ingredients found on one of the OSHA designated carcinogen lists that are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
Methylene Chloride	Anticipated carcinogen	2B	Not listed
Methylene Chloride is classified A3, animal carcinogen, by ACGIH			
Dimethyl Formamide	Not Listed	2B-Possible Carcinogen	Not listed
Dimethyl Formamide is classified A4 by ACGIH (not classifiable as a human carcinogen)			

4. FIRST AID MEASURES

SKIN: Remove any contaminated clothing. Rinse affected areas with water for at least 15 minutes.

EYES: Rinse eyes with plenty of water for at least 15 minutes. Contact a physician.

INHALATION: Remove from exposure area to fresh air. If victim is not breathing administer artificial respiration according to your level of training and obtain professional medical assistance immediately

INGESTION: Do not induce vomiting unless directed to do so by physician. Contact physician immediately.

ADVICE TO PHYSICIAN: Treat supportively and symptomatically.

5. FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES**

FLASH POINT:	Greater than 150 °F
FLASH POINT METHOD:	Closed Cup
AUTOIGNITION TEMPERATURE:	Not Known
UPPER FLAME LIMIT (volume % in air):	Not Known
LOWER FLAME LIMIT (volume % in air):	Not Known
FLAME PROPAGATION RATE (solids):	Not Known
OSHA FLAMMABILITY CLASS:	Not applicable

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EXTINGUISHING MEDIA:

Dry chemical or carbon dioxide

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Very high vapor pressure. Containers may rupture if exposed to extreme heat or fire conditions. Will form flammable vapor-air mixtures at 100°C (212°F) and higher.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

IN CASES OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Isolate the spill area. Stop leak in a safe and practical manner. (If leak cannot be stopped easily and safely, advise trained emergency response personnel of the situation.) Using inert material (such as ground corncobs) dike the spilled solvent to prevent it from running into drains or waterways. Place absorbed material in a compatible leak-proof container for disposition by persons trained in the handling of hazardous substances

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Do not use in unventilated areas. Avoid breathing vapors. Avoid contact with skin and eyes. Wear neoprene, polyvinyl chloride, or other solvent resistant gloves, apron and boots.

STORAGE RECOMMENDATIONS:

Store in closed containers in an area designed for toxic substances. Protect from temperature extremes and from light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide general or local exhaust ventilation systems to maintain airborne concentrations below exposure levels. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

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PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Where liquid contact with exposed skin is possible, wear solvent resistant impervious personal protective equipment (gloves, face shields, etc.). Contaminated clothing and PPE should be laundered and cleaned separately at the work site.

EYE PROTECTION:

Wear safety glasses. Contact lenses should not be worn. Where splashing or dripping is likely to occur, use chemical resistant goggles and/or face shield.

RESPIRATORY PROTECTION:

Where the airborne contamination and subsequent employee exposure cannot be maintained below the exposure level, NIOSH approved supplied breathing air systems are required. Air purifying respirators (charcoal canister type) are authorized only for emergency escape. For complete details concerning respiratory protection for methylene chloride see 29 CFR 1910.1052.

ADDITIONAL RECOMMENDATIONS:

Provide safety showers and eyewash stations.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Methylene Chloride	50 ppm TWA	25 ppm TWA (skin) 125 ppm STEL (skin)	None
Dimethyl Formamide	10 ppm TWA (skin)	10 ppm TWA (skin)	None

- * = Limit established by Honeywell International, Inc.
- ** = Workplace Environmental Exposure Level (AIHA).
- *** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, colorless
PHYSICAL STATE:	Liquid
MOLECULAR WEIGHT:	Not known
CHEMICAL FORMULA:	Mixture
ODOR:	Mild, Sweet (similar to Chloroform)
SPECIFIC GRAVITY (water = 1.0):	1.139
SOLUBILITY IN WATER (weight %):	Not known
pH:	Not Applicable

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BOILING POINT:	Not known		
MELTING POINT:	Not known		
VAPOR PRESSURE:	Not known		
VAPOR DENSITY (air = 1.0):	Not known		
EVAPORATION RATE:	0.5	COMPARED TO:	Ether =1
% VOLATILES:	100		
FLASH POINT:	None		

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY**NORMALLY STABLE? (CONDITIONS TO AVOID):**

Stable

INCOMPATIBILITIES:

Aluminum, magnesium and strong alkaline solutions. Aluminum and magnesium can react with Methylene Chloride under some circumstances, especially if exposed over a long time period.

HAZARDOUS DECOMPOSITION PRODUCTS:

Avoid open flame or hot surfaces, which can cause thermal decomposition.
Toxic and corrosive gases of phosgene, hydrogen chloride, and/or carbon monoxide can form.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION**Methylene Chloride****IMMEDIATE (ACUTE) EFFECTS:**

- Rat, oral, LD₅₀: 1600 mg/kg
- Mouse, inhalation, LC₅₀: 14,400-ppm/7 hrs.
- Rabbit, eye: moderate irritant (162 mg)
- Rabbit, skin: moderate irritant (100-mg/24 hr.)

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Can cause damage to liver and kidneys. Suspected carcinogen based on 2-yr. bioassay in rats that showed liver tumors.

OTHER DATA:

- Mutagenicity: mutagenic in salmonella typhimurium Ames assay
- : gene mutation in hamster ovary cells t 3,000 ppm
- : DNA damage in mouse liver cells (400 u mol/L)

Dimethyl Formamide**IMMEDIATE (ACUTE) EFFECTS:**

- Oral, Rat LD₅₀: 2800 mg/Kg

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Oral, Mouse LD₅₀ : 3750 mg/Kg
Inhalation, Mouse LC₅₀ : 9400 mg/m³ /2h
Dermal, Rabbit LD₅₀: 4720 mg/Kg

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Inhalation, Rat (100 or 400 ppm for 6h/day, 5 days/week for 2 yr.) produced toxic effects in the liver.
Inhalation, Mouse (100 or 400 ppm, males and 400 ppm, females for 6 h/day, 5 days/week for 18 mos.)
produced toxic effects in the liver.

OTHER DATA: None.

12. ECOLOGICAL INFORMATION**Methylene Chloride**

LC₅₀ (Fathead minnow): 310 mg/L/96 hr., static
LC₅₀ (Fathead minnow): 193 mg/L/96 hr., flow-through
LC₅₀ (Daphnia magna): 224 mg/L/48 hr.

Dimethyl Formamide

The effects of low concentrations of dimethyl formamide on aquatic life are not known. Do not allow material to enter sewers or waterways.

13. DISPOSAL CONSIDERATIONS**RCRA**

Is the unused product a RCRA hazardous waste if discarded? Yes
If yes, the RCRA ID number is: U080, D001

OTHER DISPOSAL CONSIDERATIONS:

Dispose of in accordance with local, state and federal regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT PROPER SHIPPING NAME: Toxic liquids, organic, n.o.s. (Dichloromethane, Dimethylformamide)
US DOT HAZARD CLASS: 6.1 Toxic
US DOT ID NUMBER: UN 2810
US DOT PACKING GROUP: III
NA EMERGENCY RESPONSE GUIDE: 153

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For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

TSCA INVENTORY STATUS: Chemicals in this mixture are listed on the TSCA inventory.

OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPO (lb)</u>
Methylene Chloride	1000	Not Listed
Dimethyl Formamide	100	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate, Delayed.

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
Methylene Chloride	
Dimethylformamide	

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
None Listed		

ADDITIONAL REGULATORY INFORMATION:**California Proposition 65 Label Statement**

Methylene Chloride is listed on one of the California Proposition 65 lists; therefore, the following statement has been placed on the product label:

"Warning: This product contains a chemical known to the State of California to cause cancer."

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No Data

FOREIGN INVENTORY STATUS:

No Data

16. OTHER INFORMATION**CURRENT ISSUE DATE:** August, 2000**PREVIOUS ISSUE DATE:** New**CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:**

None

NFPA Classification

Health:	2
Flammability:	1
Reactivity:	0