

MATERIAL SAFETY DATA SHEET ATTACK

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Hazard Ratings:

ACUTE HEALTH 2	FIRE 2	REACTIVITY 0	HAZARD RATING : Least-0, Sllght-1 Moderate- 2, High- 3 Extreme- 4
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Product Name: Attack

Chemical Name: *mixture*

Chemical Family: dichloromethane

Section II-a No:	Product / Composition	Ingredients	Cas Number	Percent
P-ATTACK	Mixture			100
1	-dichloromethane ¹		75-09-2	"
2	-dimethylformamide		68-12-2	"

Attack is a mixture of the above two components. The percentage of each of these ingredients is *proprietary* information

¹denotes chemical subject to reporting requirements of (SARA) section 313 and 40 CFR part 372

Suspected cancer agent: yes

Section II-B No:	Toxicity and First Aid			
	Acute oral LD50	Acute Dermal LD50	6-hours	ALC
1	Not available	Not available	Not available	
2	2500 mg/xg (rals)	4720 mg/xg (rabblls)	5000 ppm (rals)	
No.	Exposure		Limits	

1. ACGIH; 50 ppm TWA (8hr) OSHA; 25 ppm TWA (8hr) 1000 ppm ceiling
(odor threshold approximately 200-300 ppm: causes olfactory fatigue)
Consumption of alcoholic beverages may increase the potential for development of toxic effects from exposure to this product

2. ACGIH; 10 ppm 30mg/m3,TWA (8hr) OSHA: 10 ppm, 30mg/m3, TWA (8hr) skin
Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVS.
These exposure limits may not be applicable to all persons and those with medical conditions listed below.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE.
ALCOHOLISM, ACUTE AND CHRONIC LIVER AND KIDNEY DISEASE, CHRONIC LUNG DISEASE, ANEMIA,
CORONARY DISEASE OR RHYTHM DISORDERS OF THE HEART

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SECTION III

HEALTH INFORMATION

The health effects noted below are consistent with the requirements under the OSHA hazard communication standard (29 CFR 1910.1200).

INHALATION

Major route of potential exposure. Product depresses the central nervous system. Concentrations between 900-1000 ppm may cause dizziness. Nausea, headaches, and vomiting can occur at concentrations above 2000 ppm. At 7000 ppm numbness and tingling in arms and legs and rapid heartbeats have occurred. Loss of consciousness and death have occurred at levels above 9000 ppm, if exposure is prolonged. If inhaled, remove to fresh air. If not breathing or in respiratory distress, start artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.

SKIN CONTACT

Product is painful and irritating if confined to skin by gloves, clothing, etc. Prolonged or repeated contact may cause irritation, defatting of skin, and dermatitis. Immediately remove contaminated clothing and shoes. Immediately flush with large amount of water for at least 15 minutes. Obtain immediate medical attention. Launder clothing before reuse and discard contaminated leather articles.

EYE CONTACT

Product may be extremely irritating to the eyes and may cause temporary corneal injury. Vapors may be irritating.

INGESTION

Single dose toxicity low to moderate. Aspiration may occur during swallowing or vomiting, resulting in lung damage, and can cause chemical pneumonia and systemic effects. May cause liver damage

SECTION IV

EMERGENCY AND FIRST AID PROCEDURES

INHALATION:

Remove to fresh air if effects occur. If not breathing or in respiratory distress, clear person's airway and start artificial respiration. With a physician's advice, give supplemental oxygen. Get medical attention.

SKIN:

Immediately remove contaminated clothing and shoes. Immediately flush with large amount of water for at least 15 minutes. Obtain immediate medical attention. Launder clothing before reuse and discard contaminated leather articles.

EYES:

Immediately flush with large amount of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Obtain immediate medical attention. If physician is not immediately available, continue flushing with water for additional 15 minutes.

INGESTION:

Do not induce vomiting. Immediately give 2 glasses of water or activated charcoal slurry. Do not give anything by mouth to an unconscious or convulsing person. Call a physician immediately.

Note to physician: adrenalin should never be given to person overexposed to methylene chloride.

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SECTION V SUPPLEMENTAL HEALTH INFORMATION

Chronic overexposures found to produce liver and kidney toxic effects in experimental animals.

CARCINOGENICITY

Component - 1: has been evaluated for possible cancer causing effects in laboratory animals. Inhalation studies at concentrations of 2000, and 4000ppm increased the incidence of malignant liver and lung tumors in mice. Inhalation studies of rats have shown increased the incidence of benign mammary gland tumors in female rats at concentrations of 500ppm. And above and increases the incidence of benign mammary gland tumors in male rats at concentrations of 1500ppm and above. Rats exposed to 50 and 200 ppm via inhalation showed no increased incidence of tumors. Mice and rats; exposed by ingestion at levels up to 250 mg/kg/day lifetime and hamsters exposed via inhalation to concentrations up to 3500 ppm lifetime did not show an increased incidence of tumors.

(IARC) has concluded that with respect to *dichloromethane* and *dimethylformamide*, there is sufficient evidence of the carcinogenicity to experimental animals and inadequate evidence of the carcinogenicity to humans, resulting in a classification as a 2b animal carcinogen. The (NTP) has identified *dichloromethane* as an animal carcinogen. The state of California has listed the *dichloromethane* as a chemical known to the state to cause cancer.

REPRODUCTIVE TOXICITY

Tests have been conducted to evaluate the adverse effects *dichloromethane* may have on reproduction and offspring of laboratory animals. The results indicate *dichloromethane* does not cause birth defects in laboratory animals. The test results for *dimethylformamide* is not available.

SECTION VI EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Avoid breathing vapors/mists. Vapor concentration that exceed 50ppm, an NIOSH-approved full-face respirator with organic vapor cartridges is acceptable. Use either a full-face, self-contained breathing apparatus or air line respirator with full facepiece for vapor concentrations above 1000 ppm and for spills and or emergencies.

PROTECTIVE CLOTHING

Wear chemical goggles, full-length face shield. Avoid contact with skin and clothing. Wear chemical-resistant gloves such as viton or butyl. Solvent-resistant boots, apron and protective clothing.

ADDITIONAL PROTECTIVE MEASURES

Use ventilation as required to control vapor concentrations to maintain exposure levels below 50ppm (TWA) to determine exposure levels, monitoring should be performed regularly. Eye wash fountains and safety shower should be available for emergency use.

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SECTION VII

PHYSICAL DATA

Light blue liquid, mildly sweet odor.
Specific gravity: 1.32 @ 25/25°C
Vapor density (air=1): >2.5
Vapor pressure: <350mm Hg @20°C
Water solubility: 1.32 gm/100 gm @ 25°C

%volatile by volume: 100
Melting point :not determined
Boiling point: 40.1°C (104°F)
Evaporation rate: < 1
determined. (N-BUTYL ACETATE=1)

SECTION VIII

FIRE AND EXPLOSION HAZARDS

Flash point and method: none
(tcc)

Flammable limits in air
12 - 19% (vol.) @ 100°C

Extinguishing media

Use water fog, 'alcohol' foam, dry chemical or CO₂.

Special fire fighting procedures and precautions

Material will not burn unless preheated. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus.

Unusual fire and explosion hazards

Concentrated vapors can be ignited by high intensity ignition source. Firefighters should wear self-contained positive pressure breathing apparatus due to thermal decomposition products and avoid skin contact

SECTION IX

REACTIVITY

Stability: Stable

Hazardous polymerization: Will not occur

Condition and material to avoid:

Avoid heat, flame and *contact* with electric arcs, or other hot surfaces which can cause thermal decomposition. Avoid strong alkalis, oxygen, nitrogen peroxide, sodium, potassium, polyhalogenated compounds and other oxidizers and reactive metals.

Hazardous decomposition products

Hydrogen chloride, phosgene, chlorine, may release dimethylamine and carbon monoxide.

Additional protective measures

Use ventilation as required to control vapor concentrations. Eye wash fountains and safety shower should be available for emergency use.

SECTION X

STORAGE AND HANDLING PRECAUTIONS

Store labeled, sealed containers in a cool, dry, well ventilated area out of sunlight. Prevent water or moist air from entering containers. Do not cut or weld on empty or full containers. Aluminum equipment should not be used for storage and/or transfer. Vapors are heavier than air and will collect in low area. Do not remove or deface label. Do not reuse container.

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SECTION XI SPILL OR LEAK PROCEDURES

Evacuate area, ventilate, and avoid breathing vapors. Dike area to contain spill. If spill occur indoors, turn off air conditioning and/or heating system, to prevent vapors from contaminating entire building. Clean up area by mopping or with absorbent material and place in closed containers for disposal. Prevent entry into sewers and waterways.

Small spills Soak up residue with an absorbent such as clay, sand or other suitable material; dispose of properly. Consult federal, state, or local disposal authorities for approved procedures.

SECTION XII SPECIAL PRECAUTION

Warning. Extremely irritating to the eyes. May cause skin and respiratory tract irritation and sensitization. Containers, even those that have been emptied, can contain hazardous product residues. Wash with soap and water before eating, drinking, smoking, applying cosmetic, or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed.

Fumes and vapors from the thermal and chemical decompositions vary widely in composition and toxicity. Do not breath fumes. Use a NIOSH-approved respirator as required to prevent over exposure.

The "skin" notation indicates that the liquid and vapor can penetrate skin and mucous membranes. Therefore, control of inhalation alone may not be sufficient to prevent an excessive dose.

Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Misuse of empty containers can be hazardous. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize containers to empty them.

SECTION XIII TRANSPORTATION REQUIREMENTS

Department of transportation class

dichloromethane, 6.1, un1593, pg III.,rq

Placard required:

Keep away from food, 1593, class 6

Labels required:49 CFR, section 173.153 exceptions for division 6.1 . B. *limited quantities of division 6.1 materials in packing group III are excepted from the specification packaging requirements.* Keep away from food, class 6, label as required by OSHA hazard communication standard, and any applicable state and local regulations. Use harmful label when transported by air.

SECTION XIV OTHER REGULATORY CONTROLS

The components of this product are listed on the TSCA inventory of chemical substances.

SECTION XV STATE REGULATORY INFORMATION

Dichloromethane and dimethylformamide may be listed by individual states: other products specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your State.

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SECTION XVI

SPECIAL NOTES

Hughes Associates recommends that its customers minimize their exposure to "Attack". We therefore suggest that our customers consider adopting the lower of the current OSHA pel or the ACGIH TLVS limits.

Regulatory information: (not meant to be all-inclusive-selected regulations represented).

Notice: the information contained herein is based on the data available to us and is believed to be correct as of the effective date shown above. However, Hughes Associates makes no warranty, express or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Hughes Associates assumes no responsibility for injury from the use of the product described herein.

Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The specific information herein is made for the purpose of complying with numerous Federal, state or provincial, and local laws and regulations. See MSDS sheet for health and safety information.