

# Safety Data Sheet

MILSPRAY Tough Coat™ PT – Part A

Revision Date: June 15, 2015

## Section 1 - Manufacturer Identification

**Product Name:** Tough Coat™ PT - Part A

**Recommend Use:** Touch-Up Military Paint

**Supplier's Name:** MILSPRAY Military Technologies

**Address:** 845 Towbin Ave  
Lakewood, NJ 08701

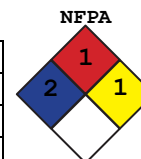
**Phone:** 732-886-2223

**EMERGENCY PHONE:** 1-800-424-9300 (Chemtrec)

**MILSPRAY**

Military Technologies

HMIS	
Health	2
Flammability	1
Reactivity	1
Personal Protection	



## Section 2 - Hazards Identification

**GHS Ratings:** Not available.

**GHS Signal Word:** Warning



**GHS Hazards:**

Irritating to eyes, respiratory system and skin.  
Risk of serious damage to respiratory system.  
May cause sensitization by inhalation and skin contact.  
Repeated inhalation of aerosol at levels above the occupational exposure limit could cause respiratory sensitization.  
The onset of the respiratory symptoms may be delayed for several hours after exposure.  
A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons.

**GHS Precautions:**

Avoid breathing mist, spray. Use only outdoors or in a well-ventilated area.  
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell. Wash thoroughly after handling.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.  
In case of inadequate ventilation wear respiratory protection. If experiencing respiratory symptoms: Call a doctor.  
Dispose of contents/container in accordance with local/regional/national/international regulations.  
Contaminated work clothing must not be allowed out of the workplace. Wash contaminated clothing before reuse. Wear protective gloves. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention.  
Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

**OSHA/HCS Status:** This material is classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).

## Section 3 - Composition/Information on Ingredients

Chemical Name	CAS #	WT %
Polymeric Diphenylmethane Diisocyanate	9016-87-9	70-90
Modified Polymeric MDI	Not Listed	1 - 5
Propylene Carbonate	108-32-7	20

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## Section 4 – First Aid Measures

**EYE CONTACT:** Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY.

**SKIN CONTACT:** Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or a burning sensation develops and persists, obtain medical advice. Contaminated clothing should be thoroughly cleaned before reuse.

**INHALATION:** Remove patient from exposure, keep warm and at rest. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is labored, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing.

**INGESTION:** DO NOT induce vomiting. Provided the patient is conscious, wash out mouth with water then give 1 or 2 glasses of water to drink. Refer person to medical personnel for immediate attention.

**NOTES TO PHYSICIAN:** Symptomatic- and supportive therapy as needed following severe exposure. In such cases, medical follow-up should be maintained for at least 48 hours.

**GENERAL:** In case of accident or if you feel unwell, seek medical advice IMMEDIATELY (show the MSDS where possible).

## Section 5 – Fire Fighting Measures

**Flash Point:** Closed cup: >397°F (208.8°C)

**UEL:** N/A

**LEL:** N/A

**SUITABLE EXTINGUISHING MEDIA:** Carbon dioxide, dry chemical, or appropriate foam. If water is used, very large quantities are required. Reaction between water and hot isocyanate may be vigorous. Contain run-off water with temporary barriers.

**UNSUITABLE EXTINGUISHING MEDIA:** None known.

**HAZARDOUS THERMAL DECOMPOSITION PRODUCTS:** Not available.

**PRODUCTS OF COMBUSTION:** Carbon monoxide, carbon dioxide, nitrogen oxides and some HCN.

**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:** As appropriate for surrounding materials/equipment. Use self-contained breathing apparatus and full protective clothing (Bunker gear).

## Section 6 – Accidental Release Measures

**PERSONAL PRECAUTIONS:** Immediately contact emergency personnel. Evacuate the area. Keep upwind to avoid inhalation of vapors. Clean-up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including respiratory protection. Use suitable protective equipment (See SECTION 8- Exposure Controls for details).

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**ENVIRONMENTAL PRECAUTIONS:** Evacuate the area. Prevent further leakage, spillage or entry into drains.

**METHODS FOR CLEANING UP:** Contain and absorb large spillages onto an inert, nonflammable absorbent carrier (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminant. Test atmosphere for MDI vapor. Neutralize small spillages with decontaminant. Remove and dispose of residues. Notify applicable government authorities if release is reportable. The CERCLA RQ for MDI is 5,000 lbs (see CERCLA in Section 15).

**PREPARATION OF DECONTAMINATION SOLUTION:** Prepare a decontamination solution of 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets when preparing and using solution.

**USE OF DECONTAMINATION SOLUTION:** Allow deactivated material to stand for at least 30 minutes before shoveling into drums. Do not tighten the bungs. Mixing with wet earth is also effective, but slower.

**ACCIDENTAL RELEASE MEASURES:** For major spills call CHEMTREC Toll Free 1.800.434.9300 or for International call 1.703.527.3887.

## Section 7 – Handling and Storage

**GENERAL:** Ideal storage temperature is 16°C – 38°C (60°F – 100°F).

**HANDLING:** Avoid personal contact with the product or reaction mixture. Use only with adequate ventilation to ensure that the occupational exposure limit is not exceeded. The efficiency of the ventilation system must be monitored regularly because of the possibility of blockage. Avoid breathing aerosols, mists and vapors. When the product is sprayed or required.

**STORAGE:** Keep containers properly sealed and when stored indoors, in a well ventilated area. Keep contents away from moisture.

**DECONTAMINATION SOLUTION:** 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets when preparing and using solution.

## Section 8 – Exposure Controls/Personal Protection

Product	Exposure Limits
N/A	<b>ACGIH TLV (United States, 1/2006)</b> TWA: 0.005 mg/m <sup>3</sup> 8 hour/hours TWA: 0.005 ppm 8 hour/hours <b>NIOSH REL (United States, 12/2001)</b> CEIL: 0.2 mg/m <sup>3</sup> 10 minute/minutes CEIL: 0.02 ppm 10 minute/minutes CEIL: 0.05 mg/m <sup>3</sup> 10 hour/hours CEIL: 0.005 ppm 10 hour/hours <b>OSHA PEL (United States, 8/1997)</b> CEIL: 0.2 mg/m <sup>3</sup> CEIL: 0.02 ppm <b>OSHA PEL 1989 (United States, 3/1989)</b> CEIL: 0.20 mg/m <sup>3</sup> CEIL: 0.02 ppm

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**PREVENTIVE MEASURES:** Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

**ENGINEERING CONTROLS:** Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to the ACGIH publication "Industrial Ventilation".

**HYGIENE:** Follow the usual precautionary measures for handling chemicals. Keep away from food and beverages. Immediately remove all soiled and contaminated clothing. Avoid contact with eyes, skin and clothing. Wash hands after use. Wash all contaminated clothing and shoes before reuse.

**RESPIRATORY:** The following protective materials are recommended:

Gloves - neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long term use. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

**HANDS:** Gloves - neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long term use.

**EYES:** Chemical safety goggles. If there is a potential for splashing, use a full face shield.

**SKIN:** Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

**OTHER PROTECTION:** Consult your supervisor or S.O.P. for special handling instructions. Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted.

## Section 9 - Physical and Chemical Properties

**PHYSICAL STATE:** Liquid

**FLASH POINT:** 208.8°C (397°F)

**AUTO-IGNITION TEMPERATURE:** Not available.

**UPPER FLAMMABILITY LIMIT:** Not determined.

**LOWER FLAMMABILITY LIMIT:** Not determined.

**APPEARANCE:** Brown

**ODOR:** Slight

**ODOR THRESHOLD:** 0.4 (4,4' Diphenylmethane Diisocyanate)

**SPECIFIC GRAVITY:** 1.24

**pH:** Not available.

**BOILING POINT:** Not available.

**MELTING POINT:** Not available.

**VAPOR PRESSURE:** 0.0003 mm Hg at 20°C

**VAPOR DENSITY:** 8.5 approx.

**SOLUBILITY:** Reacts with water, soluble in most organic solvents

**EVAPORATION RATE:** Not determined.

## Section 10 – Stability and Reactivity

**STABILITY:** Stable at room temperature.

**HAZARDOUS POLYMERIZATION:** Polymerization may occur at elevated temperatures in the presence of alkalies, tertiary amines and metal compounds.

**CONDITIONS TO AVOID:** Avoid high temperatures. Avoid freezing.

**INCOMPATIBLE MATERIALS:** This product will react with any materials containing active hydrogens such as water, alcohol, amines, bases and acids. The reaction with water is very slow under 50 °C (122° F) but is accelerated at higher temperatures.

**DECOMPOSITION PRODUCTS:** Highly unlikely under normal industrial use. See Section 5.

## Section 11 – Toxicological Information

**Primary Route(s) Of Entry:** Skin Contact, Skin Absorption, Inhalation, Eye Contact

### ACUTE TOXICITY:

**INGESTION:** Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50, this product is considered practically nontoxic by ingestion.

**INHALATION:** This product is a respiratory and potential respiratory sensitizer. Inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization and lung injury. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing and/or flu-like symptoms. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons. In a single evaluation of 5 men occupationally exposed to MDI and hydrocarbon solvents vapors under conditions where adequate ventilation or other safety precautions were not used, neuropsychologic findings were attributed to MDI.

**EYES:** The aerosol, vapor or liquid will irritate human eyes following contact.

**SKIN:** Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

### POTENTIAL CHRONIC HEALTH EFFECTS:

**CARCINOGENIC EFFECTS:** The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP.

**Mutagenic Effects:** There is no substantial evidence of mutagenic potential.

**Teratogenicity/ Reproductive Toxicity:** No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations well in excess of the defined occupational limits.

**Chronic Effects:** A study was conducted where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol either at concentrations of 0, 0.2, 1 or 6 mg/m<sup>3</sup>. No adverse effects were observed at 0.2 mg/m<sup>3</sup>

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concentrations. At the 1 mg/m<sup>3</sup> concentration minimal nasal and lung irritant effects were seen. Only at the top concentration (6.0 mg/m<sup>3</sup>) there was an increased incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). Overall, the tumor incidence, both benign and malignant, and the number of animals with tumors were not different. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur.

Toxicity to Animals	Test	Result	Species
Polymeric MDI	LC50	>1000mg/l (At highest level tested of 1000mg/l there were no deaths)	Zebra Fish
Propylene Carbonate	EC50 EC50	>1000mg/l >100mg/l	Daphnia magna E. Coli

## Section 12 - Ecological Information

Diphenylmethane 4,4'-diisocyanate	Zebra Fish (LC50) Daphnia Magna (EC50)	>1000mg/l >1000mg/l
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## Section 13 - Disposal Considerations

The generation of waste should be avoided or minimized wherever possible.

Disposal should be in accordance with local, state, provincial or national regulations. This material is not a hazardous waste under RCRA 40 CFR 261. Small quantities should be treated with a decontaminant solution (See Section 6). The treated waste is not a hazardous material under RCRA 40 CFR 261. Chemical waste, even small quantities, should never be poured down drains, sewers, or waterways.

Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

## Section 14 - Transport Information

EMERGENCY CONTACT: For Spills, Leaks, Fire or Exposure call

CHEMTREC Toll Free: 800.424.9300

International Calls:

703.527.3887

Not Regulated

TDG: Not Regulated

IMO: Not Regulated

IATA/ICAO Class: Not Regulated

## Section 15 - Regulatory Information

### United States

This material is classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).

### OSHA Classification:

Physical: Not regulated.

Health: Highly toxic, respiratory sensitizer, skin sensitizer, irritant.

Target Organ: Respiratory Tract, Skin.

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**U.S. Federal Regulations:** TSCA Regulations: All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory. This Product does not contain nor is it manufactured with ozone depleting substances.

**SARA 313:** This product contains the following toxic chemical(s) subject to reporting requirements:<45% 4,4 - Diphenylmethane Diisocyanate (CAS 101-68-8) This product does not contain nor is it manufactured with ozone depleting substances.

**CERCLA:** 4,4-Methylene Diphenyl Diisocyanate (CAS 10-68-8) has a 5,000 lb. RQ (reportable quantity). Any spill or release above the RQ must be reported to the National Response Center (800-424- 8802). The % of 4,4',-MDI in this product is listed in Section 2 of this MSDS.

**Form R - Reporting Requirements:**

Diphenylmethane 4,4'-diisocyanate	101-68-8	22%
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**Supplier Notification:**

Diphenylmethane 4,4'-diisocyanate	101-68-8	22%
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**SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.**

State Regulations

Massachusetts Right-to-know, Pennsylvania Right-to-know, New Jersey Right-to-know  
CERCLA

**Canada:** This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulations) and the MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

**WHMIS (Canada):**

WHMIS Class D-1A: Material causing immediate and serious toxic effects (very toxic).

WHMIS Class D-2A: Material causing other toxic effects (very toxic).

WHMIS Class D-2B: Material causing other toxic effects (toxic).

**CEPA:** DSL/NDSL: All ingredients listed.

## Section 16 - Other Information

**HMIS:** Health = 2 Flammability = 1 Reactivity = 1 Personal Protection = N/A

**NFPA:** Health=2 Fire Hazard=1 Instability=1

**DISCLAIMER:**

This SDS is based on information believed to be reliable and accurate. Because of changing reporting requirements and other variables it is impossible to guarantee the accuracy of the information contained in this document. It is the responsibility of the user to determine proper personal protection based on the actual condition of use and to comply with all Federal, State and Local laws and regulations.

Revision History

6/15/2015 - Original SDS version; approval JH