

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ARM903SLx PART B
PRODUCT CODES: 903SLx B

MANUFACTURER: Armorpoxy Inc
STREET ADDRESS: 1260 North Avenue
CITY, STATE, ZIP: Plainfield, NJ 07062

INFORMATION PHONE: 888-755-7361
EMERGENCY PHONE: Chemtrec 800-424-9300

FAX PHONE:

PREPARED BY: Armorpoxy Inc

DATE REVISED: 5/4/18

Chemical Name or Class: MDI isocyanate

SECTION 2: HAZARDS IDENTIFICATION**Hazard Overview**

GHS Classification: Acute toxicity, inhalation Category 4, Skin corrosion/irritation Category 2, Serious eye damage/eye irritation Category 2A, Sensitization, respiratory Category 1, Sensitization, skin Category 1, Carcinogenicity Category 2, Specific target organ toxicity, single exposure Category 3 (Respiratory tract irritation), Specific target organ toxicity, repeated exposure Category 2

GHS Label Elements and Precautionary Statements:

Label Elements: Health Hazard Exclamation Mark

**Hazard Statements:**

Warning: Harmful if inhaled.
Warning: Causes skin irritation
Warning: Causes serious eye irritation
Danger: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Warning: May cause an allergic skin reaction.
Warning: Suspected of causing cancer.
Warning: May cause respiratory irritation.
Warning: May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P284 Wear respiratory protection.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P271 Use only outdoors or in a well-ventilated area.
P260 Do not breathe dust/fume/gas/mist/vapours/spray

Response

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352 IF ON SKIN: wash with plenty of soap and water.
P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 IF eye irritation persists: Get medical advice/attention.
P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

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P314 Get medical advice/attention if you feel unwell.

Storage:

P405 Store locked up.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1 PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

MAY CAUSE IRRITATION.

SKIN:

MAY CAUSE IRRITATION OR ALLERGIC SKIN RESPONSE. SKIN CONTACT MAY CAUSE SENSITIZATION.

INGESTION:

THIS MATERIAL HAS A PROBABLE LOW ACUTE ORAL TOXICITY. Slightly hazardous.

INHALATION:

EXPOSURE MAY INCLUDE IRRITATION TO THE NOSE, THROAT AND LUNGS AND RESPIRATORY SYSTEM, POSSIBLY COMBINED WITH DRYNESS OF THE THROAT OR CHEST AND DIFFICULTY IN BREATHING. SYMPTOMS MAY BE DELAYED. A REACTIVE RESPONSE TO MDI MAY DEVELOP IN SENSITIZED PERSONS.

HEALTH HAZARDS (ACUTE AND CHRONIC):

THERE ARE REPORTS THAT CHRONIC EXPOSURE MAY RESULT IN PERMANENT DECREASE IN LUNG FUNCTION. SINGLE OR REPEATED SKIN CONTACT OR INHALATION MAY CAUSE SENSITIZATION OR ALLERGIC REACTION. PERSONS WITH ASTHMATIC-TYPE CONDITIONS, CHRONIC BRONCHITIS, OTHER CHRONIC RESPIRATORY DISEASES OR RECURRENT SKIN ECZEMA OR SENSITIZATION SHOULD BE EXCLUDED FROM CONTACT TO MATERIALS OR WORKING WITH THIS PRODUCTS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: yes

Component Methylenediphenyldiisocyanate, isomers and homologues: IARC group 3, Component Diphenylmethane 4,4'-diisocyanate: IARC group 3

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Methylenediphenyldiisocyanate,	26447-40-5	none	none	none	10-30
Diphenylmethane Diisocyanate	9016-87-9	NONE	NONE	NONE	30-60
* Diphenylmethane 4,4'-diisocyanate	101-68-8	0.2 mg/m3	0.05mg/m3	0.05 mg/m3	30-60

SECTION 3 NOTES:

toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.

Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4: FIRST AID MEASURES

EYES:

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

SKIN:

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Take off contaminated clothing and wash before reuse.

INGESTION:

Rinse mouth. Get medical attention if symptoms occur.

INHALATION:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Dermatitis. Rash. May cause allergic respiratory reaction. May cause redness and pain. Prolonged exposure may cause chronic effects. Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: FIRE-FIGHTING MEASURES

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FLAMMABLE LIMITS IN AIR,
(% by volume)

UPPER: not available
LOWER: not available

FLASH POINT: 390F

METHOD USED:

ESTIMATED

EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL, USE WATER SPRAY, FOG OR FOAM;; DO NOT USE WATER JET.

SPECIAL FIRE FIGHTING PROCEDURES:

USE FULL BUNKER GEAR INCLUDING A POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS. CONTAINERS MAY BURST UNDER INTENSE HEAT. IF WATER IS USED, VERY LARGE AMOUNTS ARE REQUIRED. REACTION BETWEEN WATER AND ISOCYANATE MAY BE VIGOROUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

DURING FIRE, GASSES HAZARDOUS TO HEALTH MAY BE FORMED..

ADDITIONAL CARCINOGENICITY INFORMATION:

THIS PRODUCT MAY CONTAIN INGREDIENTS SUSPECTED OF CAUSING CANCER.

SECTION 6: RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. **Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

OTHER PRECAUTIONS:

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

USE A NIOSH APPROVED PRESSURE AIR-SUPPLIED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO VAPOR IN ACCORDANCE WITH 29 CFR 1910.134. CARTRIDGE TYPE RESPIRATORS ARE NOT APPROVED FOR PROTECTION AGAINST DIISOCYANATES.

VENTILATION:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

PROTECTIVE GLOVES:

IMPERVIOUS GLOVES – NEOPRENE OR RUBBER

EYE PROTECTION:

SPLASH GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

WEAR BODY COVERING CLOTHING AND OTHER COVERINGS AS NECESSARY SUCH AS APRON AND APPROPRIATE FOOTWEAR TO AVOID CONTACT WITH MATERIAL.

WORK HYGIENIC PRACTICES:

OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

OCCUPATIONAL EXPOSURE LIMITS

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
4,4'-methylenediphenyl	Ceiling	0.2 mg/m ³
Diisocyanate (CAS		0.2 ppm

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101-68-8)

Diphenylmethane Diisocyanate [isomers (CAS 9016-87-9)	Ceiling	0.2 mg/m3 0.2 ppm
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US. ACGIH Threshold Limit Values

Components	Type	Value
4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)	TWA	0.005 ppm
Diphenylmethane Diisocyanate [isomers (CAS 9016-87-9)	TWA	0.005 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m3
	TWA	0.02 ppm 0.05 mg/m3 0.005 ppm
Diphenylmethane Diisocyanate [isomers (CAS 9016-87-9)	Ceiling	0.2 mg/m3
	TWA	0.02 ppm 0.05 mg/m3 0.005 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: MEDIUM VISCOSITY LIQUID – amber brown - must odor
BOILING POINT OR RANGE: 406F ESTIMATED
VAPOR DENSITY (AIR = 1): N/A
SPECIFIC GRAVITY (H₂O = 1): 1.24
EVAPORATION RATE: N/A
SOLUBILITY IN WATER: N/A

Odor Threshold: N/A
pH: N/A
Melting point/freezing point: N/A
Vapor Pressure: N/A
Auto Ignition Temperature: N/A
Partition Coefficient: n-octanol/water: N/A
Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY:
STABLE AT ROOM TEMPERATURE
CONDITIONS TO AVOID (STABILITY):
AVOID EXCESSIVE HEAT, OPEN FLAMES. DUE TO REACTION WITH WATER, A HAZARDOUS BUILDUP OF PRESSURE COULD RESULT.
INCOMPATIBILITY (MATERIAL TO AVOID):
CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS AND STRONG LEWIS ACIDS OR MINERAL ACIDS, ALCOHOLS, BASES AND WATER.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
CO, CO₂, NITROGEN OXIDES, HYDROCARBONS AND HCN
HAZARDOUS POLYMERIZATION:
POLYMERIZATION MAY OCCUR AT ELEVATED TEMPERATURES IN THE PRESENCE OF ALKALIES, TERTIARY AMINES AND METAL COMPOUNDS.

SECTION 11: TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Ingestion Expected to be a low ingestion hazard.

Inhalation Harmful if inhaled. May cause damage to organs by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause an allergic skin reaction. Skin irritation. May cause redness and pain. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if inhaled. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization**Respiratory sensitization**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic

Carcinogenicity Suspected of causing cancer.

Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

IARC Monographs. Overall Evaluation of Carcinogenicity

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8) - Not classifiable as to carcinogenicity to humans.

Diphenylmethane Diisocyanate [- Not classifiable as to carcinogenicity to humans.
(CAS 9016-87-9)

Methylenediphenyl Diisocyanate (mdi) (CAS 26447-40-5) - Not classifiable as to carcinogenicity to humans.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Respiratory tract irritation.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Not available.

Chronic effects

Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

Acute toxicity:**Component Diphenylmethanediisocyanate:**

LD50 Dermal Rabbit - Male, Female >9400 mg/kg

LD50 Oral Rat - Male >10000 mg/kg

LC50 InhalationDusts and mists: Rat - Male, Female = 310 mg/m³ (4 hour exposure)

Component Diphenylmethane 4,4'- diisocyanate

LD50 Dermal Rabbit - Male, Female >9400 mg/kg

LD50 Dermal Rabbit >5000 mg/kg

LD50 Rabbit – male = 100mg/kg

Intraperitoneal:

LD50 Oral Rat - Male >10000 mg/kg and LD50 Oral Rat - Male, Female >2000 mg/kg

LC50 Inhalation Dusts and mists: Rat - Male, Female >2.24 mg/L (1 hour exposure)

Medical conditions aggravated by overexposure

Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Mobility in soil

No data available.

Environmental effects:

By comparison with an analogous product, the following values are anticipated. The measured ecotoxicity is that of the hydrolysed product, generally under conditions maximizing production of soluble species. Even so, the observed ecotoxicity is low/very low. A pond study showed gross contamination caused no significant toxic effects on a wide variety of flora in all trophic levels (including fish), no detectable diaminodiphenylmethane (MDA), and no evidence of bioaccumulation of MDI or MDA.

Aquatic ecotoxicity:

Component Diphenylmethane 4,4'-diisocyanate: OECD 202 *Daphnia* sp Acute Immobilisation Test, Acute EC50 >1000 mg/L, Fresh water (*Daphnia*), 24 hours Static.

OECD 209 Activated Sludge, Respiration Inhibition Test, Acute EC50 >100 mg/L Fresh water (Bacteria) 3 hours Static.

OECD 203 Fish, Acute Toxicity Test, Acute LC50 >1000 mg/L (Fish) 96 hours Static.

OECD 211 *Daphnia Magna* Reproduction Test, Chronic NOEC >10 mg/L Fresh water (*Daphnia*) 21 days Semistatic

Biodegradability:

Component Diphenylmethane 4,4'-diisocyanate: OECD 302C Inherent Biodegradability Modified MITI Test (II), Result: -0% - not readily biodegradable - 28 days, Dose: 30 mg/L.

BCF = 200, high potential.

Other Ecological Information:

BCF = 200, high potential.

Mobility: By considering the production and use of the substance, it is unlikely that significant environmental exposure in the air or water will arise. Immiscible with water, but will react with water to produce inert and non-biodegradable solids. Conversion to soluble products, including diamino-diphenylmethane (MDA) is very low under the optimal laboratory conditions of good dispersion and low concentration. In air, the predominant degradation process is predicted to be relatively rapid OH radical attack, by calculation and by analogy with related diisocyanates.

Other adverse effects :

No known significant effects or critical hazards.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport Information

DOT: Not Regulated

IMO/MDG: Not Regulated

SECTION 15: REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

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CERCLA Hazardous Substance List (40 CFR 302.4)

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8) LISTED

Diphenylmethane Diisocyanate [(CAS 9016-87-9) LISTED

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8) % 1.0

Diphenylmethane Diisocyanate (CAS 9016-87-9) % 1.0

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8) Listed.

Diphenylmethane Diisocyanate (CAS 9016-87-9) Listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
4,4'-methylenediphenyl Diisocyanate	101-68-8	30 - 60
Diphenylmethane Diisocyanate [9016-87-9	30 - 60

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)

Diphenylmethane Diisocyanate (CAS 9016-87-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)

Diphenylmethane Diisocyanate (CAS 9016-87-9)

US. New Jersey Worker and Community Right-to-Know Act

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8) 500 lbs

Diphenylmethane Diisocyanate (CAS 9016-87-9) 500 lbs

US. Pennsylvania RTK - Hazardous Substances

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)

Diphenylmethane Diisocyanate (CAS 9016-87-9)

US. Rhode Island RTK

4,4'-methylenediphenyl Diisocyanate (CAS 101-68-8)

Diphenylmethane Diisocyanate (CAS 9016-87-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region Inventory name On inventory (yes/no)*

Australia Australian Inventory of Chemical Substances (AICS) Yes

Canada Domestic Substances List (DSL) Yes

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Canada Non-Domestic Substances List (NDSL) No
China Inventory of Existing Chemical Substances in China (IECSC) Yes
Europe European Inventory of Existing Commercial Chemical Substances (EINECS) Yes
Europe European List of Notified Chemical Substances (ELINCS) No
Japan Inventory of Existing and New Chemical Substances (ENCS) Yes
Korea Existing Chemicals List (ECL) Yes
New Zealand New Zealand Inventory Yes
Philippines Philippine Inventory of Chemicals and Chemical Substances (PICCS) Yes
United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A
"No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ARM903SL part C
PRODUCT CODES: 903SLx C

MANUFACTURER: Armorpoxy Inc.
STREET ADDRESS: 1260 North Avenue
CITY, STATE, ZIP: Plainfield, NJ 07062

INFORMATION PHONE: (888)755-7361
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: (973) 453-8114

PREPARED BY: Armorpoxy Inc

DATE REVISED: 5/4/18

Chemical Name or Class: sand/calcium hydroxide mix

SECTION 2: HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Skin Corrosion/irritation category 2, Serious eye damage/eye irritation Category 2A, Carcinogenicity category 1A,

GHS Label Elements and Precautionary Statements:

Label Elements: Health hazard, Exclamation Mark



Hazard Statements:

DANGER: May cause cancer
WARNING: Causes skin irritation
WARNING: Causes serious eye irritation

Precautionary statements:

P102 Keep out of reach of children.
P103 Read label before use
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

Response:

P302 + P352 IF ON SKIN: wash with plenty of soap and water.
P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 IF eye irritation persists: Get medical advice/attention.
P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage:

P405 Store locked up

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 3 **FLAMMABILITY:** 0 **REACTIVITY:** 0 **PERSONAL PROTECTIVE EQUIPMENT:** E

POTENTIAL HEALTH EFFECTS

EYES:

MAY CAUSE REDDENING OF THE EYES OR EYE IRRITATION.

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SKIN:

MAY CAUSE SKIN IRRITATION

INGESTION:

NONE KNOWN

INHALATION:

PROLONGED EXPOSURE TO RESPIRABLE CRYSTALLINE QUARTZ MAY CAUSE DELAYED LUNG INJURY (SILICOSIS). ACUTE OR RAPIDLY DEVELOPING SILICOSIS MAY OCCUR IN A SHORT PERIOD OF TIME IN HEAVY EXPOSURE IN SOME APPLICATIONS SUCH AS SAND BLASTING.

HEALTH HAZARDS (ACUTE AND CHRONIC):

MAY CAUSE DELAYED SILICOSIS OR RAPID SILICOSIS IN SOME OCCUPATIONS SUCH AS SANDBLASTING, SILICOSIS IS A FORM OF A DISABLING PULMONARY FIBROSIS WHICH CAN BE PROGRESSIVE AND COULD LEAD TO DEATH. INHALATION MAY LEAD TO LUNG SCARRING AND MASSIVE FIBROSIS WHICH COULD BE ACCOMPANIED BY RIGHT HEART ENLARGEMENT, HEART FAILURE, OR PULMONARY FAILURE, SMOKING AGGRAVATES THE EFFECTS OF EXPOSURE.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS CAN BE AGGRAVATED BY EXPOSURE

CARCINOGENICITY

OSHA: NO NTP: YES IARC: YES

ADDITIONAL CARCINOGENICITY INFORMATION:

IARC HAS DETERMINED THAT CRYSTALLINE SILICA INHALED IN THE FORM OF QUARTZ IS CARCINOGENIC TO HUMANS (GROUP 1- CARCINOGENIC TO HUMANS). THE NTP CLASSIFIES RESPIRABLE CRYSTALLINE SILICA AS REASONABLY ANTICIPATED TO BE A CARCINOGEN.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
*SILICON DIOXIDE	14808-60-7	0.05 mg/m3	0.025 mg/m3	0.05 mg/m3	60-100
Calcium Hydroxide	1305-62-0	5mg/m3	5mg/m3	NONE	1-5

**** indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.***

FOLLOW OSHA HAZARD COMMUNICATION RULE 29CFR SECTIONS 1910.1200, 1915.99, 1917.28, 1918.9, 1926.59, AND STATE AND LOCAL COMMUNITY RIGHT TO KNOW LAWS. (NOTE on Cement)Trace amounts of naturally occurring chemicals might be detected during chemical analysis. Trace constituents may include insoluble residue, some of which may be free crystalline silica, calcium oxide (Also known as lime or quick lime), magnesium oxide, potassium sulfate, sodium sulfate, chromium compounds, and nickel compounds.

Note: Ingredients listed without percentages, the percentages are considered a trade secret. Other components below reportable levels < 30%

SECTION 4: FIRST AID MEASURES

EYES:

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

SKIN:

Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

INGESTION:

Rinse mouth. Get medical attention if symptoms occur.

INHALATION:

Move to fresh air. Call a physician if symptoms develop or persist.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR,
(% by volume)

UPPER: not available
LOWER: not available

FLASH POINT^o F: N/A

METHOD USED:

FOAM, CO2, DRY CHEMICAL, WATER FOG

EXTINGUISHING MEDIA:

Water fog, Foam, Dry Chemical, Carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES:

CRYSTALLINE SILICA BLEND IS NEITHER A FIRE NOR AN EXPLOSION HAZARD. DURING FIRE, GASSES HAZARDOUS TO HEALTH MAY BE FORMED.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NONE KNOWN.

SECTION 6: RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

WEAR RESPIRATOR AND USE DUSTLESS HANDLING EQUIPMENT TO CLEAN UP LARGE SPILLS, PLACE IN SUITABLE CONTAINERS FOR DISPOSAL. FLUSH AREA WITH WATER AFTER PICKUP OF MATERIAL. AVOID DISCHARGE INTO DRAINS, WATER COURSES OR ONTO THE GROUND.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

STORE IN COOL DRY PLACE. PROPERLY LABEL ALL CONTAINERS AND RESEAL ALL PARTIALLY USED CONTAINERS. AVOID CREATING ANY DUST WHEN WORKING WITH THIS MATERIAL.

OTHER PRECAUTIONS:

AVOID BREATHING DUST GENERATED FROM THE MATERIAL. OBSERVE CONDITIONS OF GOOD GENERAL HYGIENE AND SAFE WORKING PRACTICES. PROVIDE TRAINING FOR YOUR EMPLOYEES RELATING TO OCCUPATIONAL EXPOSURE TO QUARTZ DUST. SEE ASTM STANDARD E1132-86 STANDARD PRACTICE FOR HEALTH REQUIREMENTS RELATING TO EXPOSURE TO QUARTZ DUST. IF BETTER THAN 500 X PEL USE A SELF CONTAINED BREATHING APPARATUS. IF SANDBLASTING, USE ANY TYPE CE SUPPLIED AIR RESPIRATOR WITH FULL FACE PIECE OR HOOD. STORE LOCKED UP.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

USE A NIOSH APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO QUARTZ DUST. PROVIDE SUFFICIENT EXHAUST TO KEEP EXPOSURE LEVELS BELOW THE ACGIH PEL.

VENTILATION:

USE EXHAUST SUFFICIENT TO MAINTAIN AIRBORNE PARTICULATES BELOW THE ACGIH PEL LIMITS ESTABLISHED.

PROTECTIVE GLOVES:

WEAR CHEMICAL RESISTANT GLOVES.

EYE PROTECTION:

SPLASH GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

PROVIDE ANY EQUIPMENT NECESSARY TO PREVENT THE INHALATION OF QUARTZ DUST.

WORK HYGIENIC PRACTICES:

OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium Hydroxide (CAS 1305-62-0)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Crystalline SiO ₂ (Quartz) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		2.4 millions of particle	respirable

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium Hydroxide (CAS 1305-62-0)	TWA	5 mg/m3	
Crystalline SiO ₂ (Quartz) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium Hydroxide (CAS 1305-62-0)	TWA	5 mg/m3	
Crystalline SiO ₂ (Quartz) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

SAFETY DATA SHEET

PRODUCT CODE: 903SLx

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: SAND GRANULAR CRUSHED OR GROUND - NO ODOR

BOILING POINT OR RANGE ° F: N/A

VAPOR DENSITY (AIR = 1): N/A

SPECIFIC GRAVITY (H₂O = 1): 2.24

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: INSOLUBLE IN WATER

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

STABLE

CONDITIONS TO AVOID (STABILITY):

CONTACT WITH POWERFUL OXIDIZING AGENTS SUCH AS FLUORINE, CHLORINE, TRIFLUORIDE, MANGANESE TRIOXIDE, OXYGEN TRIFLUORIDE

INCOMPATIBILITY (MATERIAL TO AVOID):

CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS- SEE CONDITIONS TO AVOID

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

SILICA WILL DISSOLVE IN HYDROCHLORIC ACID TO FORM A CORROSIVE GAS- SILICON TETRAFLUORIDE

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion

Expected to be a low ingestion hazard.

Inhalation

Prolonged inhalation may be harmful.

Skin contact

Causes skin irritation.

Eye contact

Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Not available.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization

Not available.

Skin sensitization

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) May cause cancer. According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline SiO₂ (Quartz) (CAS 14808-60-7) Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Crystalline SiO₂ (Quartz) (CAS 14808-60-7) Known To Be Human Carcinogen.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not available.

Chronic effects

Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

SECTION 12: ECOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Silicon Dioxide: There is no data that suggests that crystalline silica is toxic to birds, fish, invertebrates, microorganisms or plants.

Component calcium Hydroxide CAS# 1305-62-0: Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: WASTE DISPOSAL

WASTE DISPOSAL METHOD:

DISPOSE OF THE MATERIAL IN A WASTE DISPOSAL SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS.

SECTION 14: Transport Information

DOT: Not Regulated

IMO/IMDG Not regulated

SECTION 15: REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

SAFETY DATA SHEET

PRODUCT CODE: 903SLx

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Calcium Hydroxide (CAS 1305-62-0)

Crystalline SiO₂ (Quartz) (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Calcium Hydroxide (CAS 1305-62-0)

Crystalline SiO₂ (Quartz) (CAS 14808-60-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

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

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline SiO₂ (Quartz) (CAS 14808-60-7) Listed: October 1, 1988

International Inventories

Country(s) or region Inventory name On inventory (yes/no)*

TSCA Status: All components Listed or exempt

Australia Australian Inventory of Chemical Substances (AICS) Yes

Canada Domestic Substances List (DSL) Yes

Canada Non-Domestic Substances List (NDSL) No

China Inventory of Existing Chemical Substances in China (IECSC) Yes

Europe European Inventory of Existing Commercial Chemical Substances (EINECS) Yes

Europe European List of Notified Chemical Substances (ELINCS) No

Japan Inventory of Existing and New Chemical Substances (ENCS) Yes

Korea Existing Chemicals List (ECL) Yes

New Zealand New Zealand Inventory Yes

Philippines Philippine Inventory of Chemicals and Chemical Substances (PICCS) Yes

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation