# HULL PRO (Part A)

## SAFETY DATA SHEET

ACCORDING TO USA FEDERAL HAZCOM 012

## 1. IDENTIFICATION

**1.1. Product Identifier**

| | |
|---|---|
| Code: | A-HULL |
| Product name | **HULL PRO (Part A)** |

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

| | |
|---|---|
| Intended use | ***Two-part fouling-release hull protectant. Part A Base. For professional use only.*** |

**1.3. Details of the supplier of the safety data sheet**

| | |
|---|---|
| Name | **Armus LLC** |
| Full address | **137 Grand Street 3rd Floor** |
| | **New York, NY 10013** |
| Country | **United States** |
| | **Tel. (+1) 917-957-5383** |
| E-mail address of the competent person responsible for the Safety Data Sheet | bill@armussolutions.com |

**1.4. Emergency telephone number**

| | |
|---|---|
| For urgent inquiries refer to | **Tel. (+1) 917-957-5383 United States** |

## 2. HAZARDS IDENTIFICATION

**2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet.

Any additional information concerning the risks for health and/or the environment is given in sections 11 and 12 of this sheet.

Classification and Hazard Statement

| | |
|---|---|
| **Flammable liquid, category 3** | Flammable liquid and vapor |
| **Acute toxicity, category 4** | Harmful if swallowed |
| **Acute toxicity, category 4** | Harmful if inhaled |
| **Eye irritation, category 2** | Causes serious eye irritation |
| **Skin irritation, category 2** | Causes skin irritation |
| **Skin sensitization, category 1** | May cause an allergic skin reaction |
| **Specific target organ toxicity – repeated exposure, category 2** | May cause damage to organs through prolonged or repeated exposure |

Hazard pictograms:

Signal words: **WARNING**

**Hazard statements:**

| | |
|---|---|
| **H226** | Flammable liquid and vapor |
| **H302+H332** | Harmful if swallowed or if inhaled |
| **H373** | May cause damage to organs through prolonged or repeated exposure |
| **H319** | Causes serious eye irritation |
| **H315** | Causes skin irritation |
| **H317** | May cause an allergic skin reaction |

**Precautionary statements:**

**Prevention:**

| | |
|---|---|
| **P210** | Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. |
| **P260** | Do not breathe fume, mist, or spray. |
| **P242** | Use only non-sparking tools. |
| **P233** | Keep container tightly closed. |
| **P280** | Wear protective gloves / eye protection / face protection. |
| **P270** | Do not eat, drink, or smoke when using this product. |
| **P271** | Use only outdoors in a well-ventilated area. |
| **P264** | Wash with plenty of water and soap thoroughly after handling. |
| **P240** | Ground / bond container and receiving equipment. |
| **P243** | Take precautionary measures against static discharge. |
| **P241** | Use explosion-proof electrical / ventilating / lighting / … / equipment |
| **P272** | Contaminated work clothing should not be allowed out of the workplace. |

**Response:**

| | |
|---|---|
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and continue rinsing. |
| **P303+P361+P353** | IF ON SKIN: Remove contaminated clothing immediately. Rinse skin with water / shower. |
| **P312** | Contact a POISON CONTROL CENTER / seek medical attention if you feel unwell. |
| **P314** | Seek medical advice / attention if you feel unwell. |
| **P333+P313** | If skin irritation or rash occurs: Seek medical advice / attention immediately. |
| **P337+P313** | If eye irritation persists, seek medical attention. |
| **P304+P340** | IF INHALED: Move to fresh air and keep comfortable for breathing. |
| **P330** | Rinse mouth. |
| **P302+P352** | IF ON SKIN: Wash with plenty of water / … |
| **P362+P364** | Take off contaminated clothing and wash before reuse. |
| **P370+P378** | In case of fire: use dry powder or Carbon Dioxide fire extinguisher to extinguish |
| **P363** | Wash contaminated clothing before reuse. |

**Storage:**

| | |
|---|---|
| **P403+P235** | Store in a well-ventilated place. Keep cool |

**Disposal:**

| | |
|---|---|
| **P501** | Dispose of contents or container according to local/national/international regulations |

The mixture contains 15.80%;37.42% of components of unknown acute oral / inhalation toxicity.

**2.2 Other hazards**

Environmental classification as for Reg. (EU) 1272/2008 (CLP):
The product is classified as hazardous for environment pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP).

Hazard pictograms:

Signal words: **WARNING**

Classification and Hazard Statement

| | |
|---|---|
| **Hazardous to the aquatic environment, acute toxicity, category 1** | Very toxic to aquatic life. |
| **Hazardous to the aquatic environment, chronic toxicity, category 1** | Very toxic to aquatic life with long-lasting effects |

Hazard statements:

| | |
|---|---|
| **H400** | Very toxic to aquatic life. |
| **H410** | Very toxic to aquatic life with long-lasting effects |

**Precautionary statements:**

| | |
|---|---|
| **Prevention:** | |
| **P273** | Avoid release into the environment |
| **Response:** | |
| **P391** | Collect spillage |
| **Storage:** | |
| **Disposal:** | |
| **P501** | Dispose of contents or container according to local/national/international regulations |

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. Components

| *Chemical Name* | *CAS-No* | *EC* | *INDEX* | *Conc. %* | *Classification* |
|---|---|---|---|---|---|
| MAGNETITE | 1309-38-0 | 215-169-8 | --- | 18.8 | Acute toxicity, category 4 H302 Specific target organ toxicity - repeated exposure, category 2 H373, Eye irritation, category 2 H319, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335 |
| 4,4' Isopropylidenedicyclohexanol, oligometric reaction products with 1-chloro-2,3-epoxypropane | 30583-72-3 | 500-070-7 | --- | 12.028 | Skin sensitization, category 1B H317 |
| ZINC OXIDE | 1314-13-2 | 215-222-5 | 030-013-00-7 | 3.77 | Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=1 Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=1 |
| XYLENE (MIXTURE OF ISOMERS) | 1330-20-7 | 215-535-7 | 601-022-009 | 2.82 | Flammable liquid, category 3 H226, Acute toxicity, category |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | 4 H312, Acute toxicity, category 4 H332, Skin irritation, category 2 H315 |
| 4,5-Dichlor-2-octyl-3(2H)-isothiazol-3-one | 64359-81-5 | 264-843-8 | --- | 2.82 | Acute toxicity, category 2 H330, Acute toxicity, category 4 H302, Skin corrosion, category 1 H314, Serious eye damage, category 1 H318, Skin sensitization, category 1 H317, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=100, Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=100 |
| Epoxy resin (number average molecular weight <=700) | 25068-38-6 | 500-033-5 | 603-074-00-8 | 2.82 | Eye irritation, category 2 H319, Skin irritation, category 2 H315, Skin sensitization, category 1 H317, Hazardous to the aquatic environment, chronic toxicity, category 2 H411 |
| METHANOL | 67-56-1 | 200-659-6 | 603-001-00-X | 0.601 | Flammable liquid, category 2 H225, Acute toxicity, category 3 H301, Acute toxicity, category 3 H311, Acute toxicity, category 3 H331, Specific target organ toxicity - single exposure, category 1 H370 |

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## 4. FIRST-AID MEASURES

### 4.1. Description of first aid measures

**GENERAL ADVICE:**
Move out of work / application area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

**EYES:**
Remove contact lenses.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical attention.
Keep eyes wide open while rinsing.
Continue rinsing eyes during transport to medical facility or for at least 30-60 minutes.

**SKIN:**
Take off contaminated clothing and shoes immediately.
Wash immediately with plenty of water.
If irritation persists, seek medical advice/attention.
Wash contaminated clothing before using it again.

**INHALATION:**
Move to fresh air.
In the event of breathing difficulties, seek medical advice / attention immediately.
If the subject stops breathing, administer artificial respiration.
Take suitable precautions for rescue workers.

**INGESTION:**
Seek medical advice / attention immediately.
Have the subject drink as much water as possible.
Do not induce vomiting without medical advice.

### 4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product is unknown.

### 4.3. Indication of any immediate medical attention and special treatment needed

Not applicable based on available information.

## 5. FIRE-FIGHTING MEASURES

**5.1. Extinguishing media**

| | |
|---|---|
| *Suitable extinguishing equipment* | The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder, and water spray. |
| *Unsuitable extinguishing equipment* | None in particular. |

**5.2. Special hazards arising from the substance or mixture**

| | |
|---|---|
| *Specific hazards during fire fighting* | Do not breathe combustion products. |

**5.3. Advice for firefighters**

| | |
|---|---|
| *General information* | Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health.<br>Always wear full fire prevention gear.<br>Collect extinguishing water to prevent it from draining into the sewer system.<br>Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations. |
| *Special protective equipment for fire-fighters* | Normal firefighting clothing i.e., fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137). |

## 6. ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment, and emergency procedures**

Block the leakage.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes, and clothing.
These indications apply for both processing staff and those involved in emergency procedures.

**6.2. Environmental precautions**

The product must not enter the sewer system or come into contact with surface water or groundwater.

**6.3. Methods and material for containment and cleaning up**

Collect the leaked product.
Absorb spilled product with inert absorbent material.
Make sure the leakage site is well-aired.
Contaminated material should be disposed of in compliance with the provisions set forth in section 13.

**6.4. Reference to other sections**

Any information on personal protection and disposal is given in sections 8 and 13.

## 7. HANDLING AND STORAGE

**7.1. Precautions for safe handling**

Keep away from heat, sparks, and open flames.
Do not eat, drink, or smoke during use.
Without adequate ventilation, vapors may accumulate and, if ignited, catch fire even at a distance, with the danger of backfire.
When performing transfer operations involving large containers, connect to an earthing system and wear anti-static footwear.
Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges.
To avoid the risk of fires and explosions, never use compressed air when handling.
Open containers with caution as they may be pressurized.
The product must not enter the sewer system or come into contact with surface water or groundwater.

**7.2. Conditions for safe storage, including any incompatibilities**
Store only in the original container.
Store the containers sealed, in a well-ventilated place, away from direct sunlight.
Keep containers away from any incompatible materials, see section 10 for details.

**7.3. Specific end use(s)**
Refer to section 1.2

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**8.1. Control parameters**
Regulatory References:

| | | |
|---|---|---|
| **USA** | NIOSH-REL | NIOSH publication No. 2005-1 49, 3rd printing, 2007. |
| **USA** | OSHA-PEL | Occupational Exposure Limits- Limits for Air Contaminants Table Z-1-1910-1000 |
| **USA** | CAL/OSHA-PEL | California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs). |
| **EU** | OEL EU | Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC. |
| | TLV-ACGIH | ACGIH 2020 |

**ZINC OXIDE**

**Threshold Limit Value**

| Type | Country | TWA / 8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | Ppm | |
| NIOSH-REL | USA | 5 | | 15 (C) | | |
| OSHA | USA | 5 | | | | |
| OSHA | USA | 1.5 | | | | INHAL |
| OSHA | USA | 5 | | | | RESP |
| CAL/OSHA | USA | 5 | | 10 | | |
| TLV-ACGIH | --- | 2 | | 10 | | |

**XYLENE (MIXTURE OF ISOMERS)**

**Threshold Limit Value**

| Type | Country | TWA / 8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | Ppm | |
| OEL | EU | 221 | 50 | 442 | 100 | SKIN |
| TLV-ACGIH | --- | 434 | 100 | 651 | 150 | |
| OSHA | USA | 435 | 100 | | | |
| CAL/OSHA | USA | 435 | 100 | | | |

**METHANOL**

**Threshold Limit Value**

| Type | Country | TWA / 8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | Ppm | |
| OEL | EU | 260 | 200 | | | |
| TLV-ACGIH | --- | 262 | 200 | 328 | 250 | SKIN |
| OSHA | USA | 260 | 200 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| CAL/OSHA | USA | 260 | 200 | 325 (C) | 1000 (C) | SKIN |
| NIOSH | USA | 260 | 200 | 325 | 250 | SKIN |

Legend:
(C) = CEILING
INHAL = Inhalable Fraction
RESP = Respirable Fraction
THORA = Thoracic Fraction

**8.2. Exposure controls**
Make sure that the workplace is well-aired through effective local ventilation.
Personal protective equipment must comply with current regulations.

| | |
|---|---|
| *Hand Protection* | Protect hands with category III work gloves (OSHA 29 CFR 1910.138).<br>The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.<br>The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable.<br>The gloves' wear time depends on the duration and type of use. |
| *Skin Protection* | Wear category I professional long-sleeved overalls and safety footwear.<br>Wash body with soap and water after removing protective clothing. |
| *Eye Protection* | Wear airtight protective goggles (OSHA 29 CFR 1910.133). |
| *Respiratory Protection* | If the threshold value (e.g., TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose class must be chosen according to the limit of use concentration (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134).<br>In the presence of gases or vapors of various kinds and/or gases or vapors containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.<br>Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered.<br>The protection provided by masks is in any case limited.<br>If the substance considered is odorless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134. |
| *Environmental Exposure Controls* | The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.<br>This product must not enter the sewer system or come into contact with surface water or groundwater. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| Appearance | Silicone epoxy |
| Color | Transparent |
| Components | Part A Base & Part B Hardener |
| Mixing Ratio | 4:1 A:B per volume |
| VOC | <240 g/L |
| Solids by Volume | 80% |
| Flash point | > 140°F (60°C) |

## 10. STABILITY AND REACTIVITY

**10.1. Reactivity**
There are no particular risks of reaction with other substances in normal conditions of use.

**10.2. Chemical stability**
The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**
The vapors may also form explosive mixtures in the air.

| | |
|---|---|
| **Xylene (mixture of isomers)** | Stable in normal conditions of use and storage.<br>Reacts violently with: strong oxidants, strong acids, nitric acid, perchlorates.<br>May form explosive mixtures with: air. |

**10.4. Conditions to avoid**
Avoid overheating and all sources of ignition.

**10.5. Incompatible materials**
None based on available information.

**10.6. Hazardous decomposition products**
In the event of thermal decomposition or fire, gases and vapors that are potentially dangerous to health may be released.

## 11. TOXICOLOGICAL INFORMATION

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**11.1. Information on toxicological effects**

Metabolism, toxicokinetics, mechanism of action and other information
Not classified based on available information.

Information on likely routes of exposure

| | | |
|---|---|---|
| **Xylene (mixture of isomers)** | Workers | Inhalation, contact with the skin |
| | Population | Ingestion of contaminated food or water<br>Inhalation of ambient air |
| **METHANOL** | Workers | Inhalation, contact with the skin |
| | Population | Ingestion of contaminated food or water<br>Contact with the skin of products containing the substance |
| **N-BUTYL ACETATE** | Workers | Inhalation, contact with the skin |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|---|---|
| **Xylene (mixture of isomers)** | Toxic effect on the central nervous system (encephalopathy)<br>Irritating for the skin, conjunctiva, cornea, and respiratory system |
| **METHANOL** | The minimum lethal dose for humans by ingestion is considered to be in the range from 300 to 1000 mg/kg. Ingestion of 4-10 ml of the substance may cause permanent blindness in adult humans (IPCS). |
| **N-BUTYL ACETATE** | In humans, the substance's vapors cause irritation of the eyes and nose. In the event of repeated exposure, skin irritation, |

dermatitis (dryness and cracking of the skin) and keratitis appear.

Interactive effects

**Xylene (mixture of isomers)**

Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapors (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

**N-BUTYL ACETATE**

A case of acute intoxication has been reported involving a 33-year-old worker while cleaning a tank with a preparation containing xylenes, butyl acetate and ethylene glycol acetate. The person had irritation of the conjunctiva and upper respiratory tract, drowsiness, and motor coordination disorders, which disappeared within 5 hours. The symptoms are attributed to poisoning by mixed xylenes and butyl acetate, with a possible synergistic effect responsible for the neurological effects.
Cases of vacuolar keratitis are reported in workers exposed to a mixture of butyl acetate and isobutanol vapors, but with uncertainty concerning the responsibility of a particular solvent (INRC, 2011).

Acute toxicity

**Epoxy resin (number average molecular weight <=700)**

LD50 (Oral (Rat)) > 11500 mg/kg
LD50 (Dermal (Rabbit)) > 2000 mg/kg

**Xylene (mixture of isomers)**

LD50 (Oral (Rat)) 3523 mg/kg
LD50 (Dermal (Rabbit)) 4350 mg/kg
LC50 (Inhalation (Rat)) 26 mg/ liter
Exposure time: 4h

Skin corrosion / irritation
Causes skin irritation.

Serious eye damage / irritation
Causes serious eye irritation.

Respiratory or skin sensitization
Sensitizing for the skin.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.
Carcinogenicity Assessment:

**Xylene (mixture of isomers)** 1330-20-7

AGCIH: A4
IARC: 3
Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).
The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential."

Reproductive toxicity
Not classified based on available information.

STOT – single exposure
Not classified based on available information.

STOT – repeated exposure
May cause damage to organs.

Aspiration toxicity / hazard
Not classified based on available information.

## 12. ECOLOGICAL INFORMATION

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on aquatic environment.

### 12.1. Toxicity

**Epoxy resin (number average molecular weight <=700)**

| | |
|---|---|
| Toxicity to fish | LC50: 1.3 mg/ liter<br>Exposure time: 96 h |
| Toxicity Crustacea | EC50: 2.1 mg/ liter<br>Exposure time: 48 h |
| Chronic NOEC for Crustacea | 0.3 mg/ liter<br>Exposure time: 21 d |

**Zinc Oxide**

| | |
|---|---|
| Toxicity to fish | LC50 (Oncorhynchus mykiss): 1.1 mg/ liter<br>Exposure time: 96 h |
| Toxicity Crustacea | EC50 (Daphnia magna): 1.7 mg/ liter<br>Exposure time: 48 h |
| Toxicity for Algae / Aquatic Plants | (Pseudokirchnerella subcapitata) 0.14 mg/ liter<br>Exposure time: 72 h |
| Chronic NOEC for Fish | 0.53 mg/ liter |
| Chronic NOEC for Algae / Aquatic Plants | 0.024 mg/ liter |

### 12.2. Persistence and degradability

**Xylene (mixture of isomers)**

| | |
|---|---|
| Solubility in Water | 1000-10000 mg/ liter |
| Degradability: | Information not available. |

**METHANOL**

| | |
|---|---|
| Solubility in Water | 1000-10000 mg/ liter |
| Degradability: | Rapidly degradable |

**ZINC OXIDE**

| | |
|---|---|
| Solubility in Water | 2.9 mg/ liter |
| Degradability: | NOT rapidly degradable |

### 12.3. Bioaccumulative potential

**Xylene (mixture of isomers)**

| | |
|---|---|
| Partition Co-efficient: N-octanol/water | 3.12 |
| BCF | 25.9 |

**METHANOL**

| | |
|---|---|
| Partition Co-efficient: N-octanol/water | -0.77 |
| BCF | 0.2 |

**ZINC OXIDE**

| | |
|---|---|
| BCF | > 175 |

### 12.4. Mobility in soil

**Xylene (mixture of isomers)**

| | |
|---|---|
| Partition Co-efficient: soil /water | 2.73 |

### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bio-accumulative (vPvB) substances.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | |
|---|---|
| *Waste from residues* | Reuse, when possible.<br>Unused product should be considered special non-hazardous waste.<br>Disposal must be performed through an authorized waste management firm, in compliance with local, national, and international regulations. |
| *Contaminated Packaging* | Contaminated packaging must be recovered or disposed of in compliance with all waste management regulations. |

## 14. TRANSPORTATION INFORMATION

**ADR/RID**

| | |
|---|---|
| UN/ID No. | UN 1263 |
| Proper shipping name | PAINT or PAINT RELATED MATERIAL |
| Class | 3 |
| Packing Group | III |
| Labels | Label 3 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |
| HIN – Kemler: | 30 |
| Limited Quantities: | 5L |
| Tunnel Restriction Code: | (D/E) |

**IMDG**

| | |
|---|---|
| UN/ID No. | UN 1263 |
| Proper shipping name | PAINT or PAINT RELATED MATERIAL |
| Class | 3 |
| Packing Group | III |
| Labels | Label 3 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |
| EMS: | F-E, S-E |
| Limited Quantities: | 5L |

**IATA**

| | |
|---|---|
| UN/ID No. | N/A |
| Proper shipping name | PAINT or PAINT RELATED MATERIAL |
| Class | 3 |
| Labels | Label 3 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |

| | |
|---|---|
| Packing instruction (cargo aircraft) | Maximum Quantity: 220L, Packing instruction: 366 |
| Packing instruction (passenger aircraft) | Maximum Quantity: 5L, Packing instruction: 355 |
| Special precautions for user: | A3, A72, A192 |

## 15. REGULATORY INFORMATION

U.S. Federal Regulations

| | | |
|---|---|---|
| *TSCA* | All components of this product are listed on US Toxic Substances Control Act (TSCA) Inventory considered as "existing" chemical substances in U.S. commerce. | |
| *Clean Air Act Section 112(b)* | CAS 1330-20-7<br>CAS 67-56-1 | Xylene (mixture of isomers)<br>METHANOL |
| *Clean Air Act Sections 112(b), 602 Class I Substances, 602 Class II Substances* | This product, in compliance to the Act, does not contain any substances regulated as pollutants. | |
| *Clean Water Act Priority Toxic Pollutants* | This product, in compliance to the Act, does not contain any substances regulated as pollutants. | |
| *Clean Water Act: Toxic Pollutants* | CAS 1330-20-7 | Xylene (mixture of isomers) |
| *DEA List I Chemicals (Precursor Chemicals) and List II Chemicals (Essential Chemicals)* | No component(s) listed; in compliance with the List. | |
| *EPA List of Lists*<br>*313 Category Code:* | CAS 1330-20-7<br>CAS 67-56-1<br>CAS 1314-13-2 | Xylene (mixture of isomers)<br>METHANOL<br>ZINC OXIDE<br>(ZINC COMPOUNDS, ZINC OXIDE FUME) |
| *EPCRA 302 EHS TPQ* | No component(s) listed; in compliance with the List. | |
| *CERCLA RQ* | CAS 1330-20-7<br>CAS 67-56-1 | Xylene (mixture of isomers)<br>METHANOL |
| *EPCRA 313 TRI* | CAS 1330-20-7<br>CAS 67-56-1<br>CAS 1314-13-2 | Xylene (mixture of isomers)<br>METHANOL<br>ZINC OXIDE<br>(ZINC COMPOUNDS, ZINC OXIDE FUME) |
| *RCRA Code* | CAS 1330-20-7<br>CAS 67-56-1 | Xylene (mixture of isomers)<br>METHANOL |
| *CAA 112 (r) TMP TQ* | No component(s) listed; in compliance with the List. | |

State Regulations

Massachusetts / Minnesota / Pennsylvania/ California

| | |
|---|---|
| CAS 1314-13-2 | ZINC OXIDE (ZINC COMPOUNDS, ZINC OXIDE FUME) |
| CAS 1330-20-7 | Xylene (mixture of isomers) |
| CAS 7631-86-9 | AMORPHOUS SILICATE HYDRATE |
| CAS 67-56-1 | METHANOL |

New Jersey:

| | |
|---|---|
| CAS 1314-13-2 | ZINC OXIDE (ZINC COMPOUNDS, ZINC OXIDE FUME) |
| CAS 1330-20-7 | Xylene (mixture of isomers) |
| CAS 67-56-1 | METHANOL |

New York:

| | |
|---|---|
| CAS 1330-20-7 | Xylene (mixture of isomers) |
| CAS 67-56-1 | METHANOL |

CA Proposition 65:
WARNING! This product contains chemicals known to the State of California to cause cancer, reproductive harm, or birth defects.
CAS 67-56-1 METHANOL

## 16. OTHER INFORMATION

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
|---|---|
| **H226** | Flammable liquid and vapor |
| **H302+H332** | Harmful if swallowed or if inhaled |
| **H373** | May cause damage to organs through prolonged or repeated exposure |
| **H319** | Causes serious eye irritation |
| **H315** | Causes skin irritation |
| **H317** | May cause an allergic skin reaction |

LEGEND:

| | |
|---|---|
| 313 CATEGORY CODE | Emergency Planning and Community Right-to Know Act Section 313 Category Code |
| ADR | European Agreement concerning the carriage of Dangerous goods by Road |
| CAA 112 (r) RMP TQ | Risk Management Plan Threshold Quantity (Clean Air Act Section 112(R)) |
| CAS NUMBER | Chemical Abstract Service Number |
| CE50 | Effective concentration (required to induce a 50% effect) |
| CERCLA RQ | Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act) |
| CLP | EC Regulation 1272/2008 |
| DEA | Drug Enforcement Administration |
| EmS | Emergency Schedule |
| EPA | US Environmental Protection Agency |
| EPCRA | Emergency Planning and Community Right-to-Know Act |
| EPCRA 302 EHS TPQ | Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code) |
| EPCRA 304 EHS RQ | Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code) |
| EPCRA 313 TRI | Toxics Release Inventory (Section 313 Category Code) |
| GHS | Globally Harmonized System of classification and labeling of chemicals |
| IATA DGR | International Air Transport Association Dangerous Goods Regulation |
| IC50 | Immobilization Concentration 50% |
| IMDG | International Maritime Code for dangerous goods |
| IMO | International Maritime Organization |
| LC50 | Lethal Concentration 50% |
| LD50 | Lethal Dose 50% |
| OEL | Occupational Exposure Level |
| PEL | Predicted Exposure Level |
| RCRA Code | Resource Conservation and Recovery Act Code |
| REL | Recommended Exposure Limit |
| RID | Regulation concerning the international transport of dangerous goods by train |
| TLV | Threshold Limit Value |
| TLV CEILING | Concentration that should not be exceeded during any time of occupational exposure. |
| TSCA | Toxic Substances Control Act |
| TWA STEL | Short-term Exposure Limit |
| TWA | Time-weighted Average Exposure Limit |
| VOC | Volatile Organic Compounds |
| WHMIS | Workplace Hazardous Materials Information System |

GENERAL BIBLIOGRAPHY:


- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website

- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minnesota Chapter 5206 Department of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

NOTE FOR USERS:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Purchasers must provide product users with adequate training on how to use chemical products.

ARMUS MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. ARMUS SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHT HELD BY OTHERS.

CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12.
The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified: 02 / 03 / 08 / 11 / 15.

# HULL PRO (Part B)

## SAFETY DATA SHEET

ACCORDING TO USA FEDERAL HAZCOM 012

## 1. IDENTIFICATION

**1.1. Product Identifier**

| | |
|---|---|
| Code: | A-HULL |
| Product name | **HULL PRO (Part B)** |

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

| | |
|---|---|
| Intended use | ***Two-part fouling-release hull protectant. Part B Hardener. For professional use only.*** |

**1.3. Details of the supplier of the safety data sheet**

| | |
|---|---|
| Name | **Armus LLC** |
| Full address | **137 Grand Street 3rd Floor** |
| | **New York, NY 10013** |
| Country | **United States** |
| | **Tel. (+1) 917-957-5383** |
| E-mail address of the competent person responsible for the Safety Data Sheet | bill@armussolutions.com |

**1.4. Emergency telephone number**

| | |
|---|---|
| For urgent inquiries refer to | **Tel. (+1) 917-957-5383 United States** |

## 2. HAZARDS IDENTIFICATION

**2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet.

Any additional information concerning the risks for health and/or the environment is given in sections 11 and 12 of this sheet.

Classification and Hazard Statement

| | |
|---|---|
| **Acute toxicity, category 4** | Harmful if swallowed |
| **Skin corrosion, category 1** | Causes severe skin burns and eye damage. |
| **Serious eye damage, category 1** | Causes serious eye damage. |
| **Skin sensitization, category 1** | May cause an allergic skin reaction |

Hazard pictograms:

Signal words: **DANGER**

**Hazard statements:**

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H314** | Causes severe skin burns and eye damage. |
| **H317** | May cause an allergic skin reaction |

**Precautionary statements:**

**Prevention:**

| | |
|---|---|
| **P260** | Do not breathe fume, mist, or spray. |
| **P280** | Wear protective gloves / eye protection / face protection. |
| **P270** | Do not eat, drink, or smoke when using this product. |
| **P264** | Wash with plenty of water and soap thoroughly after handling. |
| **P272** | Contaminated work clothing should not be allowed out of the workplace. |

**Response:**

| | |
|---|---|
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and continue rinsing. |
| **P301+P330+P331** | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| **P303+P361+P353** | IF ON SKIN: Remove contaminated clothing immediately. Rinse skin with water / shower. |
| **P310** | Immediate call a POISON CONTROL CENTER / seek medical attention. |
| **P304+P340** | IF INHALED: Move to fresh air and keep comfortable for breathing. |
| **P330** | Rinse mouth. |
| **P302+P352** | IF ON SKIN: Wash with plenty of water / … |
| **P301+P312** | IF SWALLOWED: Call a POISON CONTROL CENTER / doctor if you feel unwell. |
| **P363** | Wash contaminated clothing before reuse. |

**Storage:**

| | |
|---|---|
| **P405** | Store locked up. |

**Disposal:**

| | |
|---|---|
| **P501** | Dispose of contents or container according to local/ national/ international regulations |

### 2.1. Classification of the substance or mixture

Not applicable.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. Components

| *Chemical Name* | *CAS-No* | *EC* | *INDEX* | *Conc. %* | *Classification* |
|---|---|---|---|---|---|
| 3-Aminopropyltriethoxysilane | 919-30-1 | 213-048-4 | 612-108-00-0 | 99.9 | Acute toxicity, category 4 H302, Skin corrosion, category 1B H314, Serious eye damage, category 1 H318, Skin sensitization, category 1 H317 |

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## 4. FIRST-AID MEASURES

### 4.1. Description of first aid measures

**GENERAL ADVICE:** Move out of work / application area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

| | |
|---|---|
| **EYES:** | Remove contact lenses.<br>In the case of contact with eyes, rinse immediately with plenty of water and seek medical attention.<br>Keep eyes wide open while rinsing.<br>Continue rinsing eyes during transport to medical facility or for at least 30-60 minutes. |
| **SKIN:** | Take off contaminated clothing and shoes immediately.<br>Wash immediately with plenty of water.<br>If irritation persists, seek medical advice/attention.<br>Wash contaminated clothing before using it again. |
| **INHALATION:** | Move to fresh air.<br>In the event of breathing difficulties, seek medical advice / attention immediately.<br>If the subject stops breathing, administer artificial respiration.<br>Take suitable precautions for rescue workers. |
| **INGESTION:** | Seek medical advice / attention immediately.<br>Have the subject drink as much water as possible.<br>Do not induce vomiting without medical advice. |

**4.2. Most important symptoms and effects, both acute and delayed**
Specific information on symptoms and effects caused by the product is unknown.

**4.3. Indication of any immediate medical attention and special treatment needed**
Not applicable based on available information.

## 5. FIRE-FIGHTING MEASURES

**5.1. Extinguishing media**

| | |
|---|---|
| *Suitable extinguishing equipment* | The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder, and water spray. |
| *Unsuitable extinguishing equipment* | None in particular. |

**5.2. Special hazards arising from the substance or mixture**

| | |
|---|---|
| *Specific hazards during fire fighting* | Do not breathe combustion products. |

**5.3. Advice for firefighters**

| | |
|---|---|
| *General information* | Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health.<br>Always wear full fire prevention gear.<br>Collect extinguishing water to prevent it from draining into the sewer system.<br>Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations. |
| *Special protective equipment for fire-fighters* | Normal firefighting clothing i.e., fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137). |

## 6. ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment, and emergency procedures**
Block the leakage.
Wear suitable protective equipment (including personal protective equipment referred to under section 8 of the safety data sheet) to prevent any contamination of skin, eyes, and clothing.
These indications apply for both product users and those involved in emergency procedures.

**6.2. Environmental precautions**
The product must not enter the sewer system or come into contact with surface water or groundwater.

**6.3. Methods and material for containment and cleaning up**
Collect the leaked product.
Absorb spilled product with inert absorbent material.
Make sure the leakage site is well-aired.
Contaminated material should be disposed of in compliance with the provisions set forth in section 13.

**6.4. Reference to other sections**
Any information on personal protection and disposal is given in sections 8 and 13.

## 7. HANDLING AND STORAGE

**7.1. Precautions for safe handling**
Keep away from heat, sparks, and open flames.
Do not eat, drink, or smoke during use.
Without adequate ventilation, vapors may accumulate and, if ignited, catch fire even at a distance, with the danger of backfire.
When performing transfer operations involving large containers, connect to an earthing system and wear anti-static footwear.
Vigorous stirring and flow through tubes and equipment may cause the formation and accumulation of electrostatic charges.
To avoid the risk of fires and explosions, never use compressed air when handling.
Open containers with caution as they may be pressurized.
The product must not enter the sewer system or come into contact with surface water or groundwater.

**7.2. Conditions for safe storage, including any incompatibilities**
Store only in the original container.
Store the containers sealed, in a well-ventilated place, away from direct sunlight.

**7.3. Specific end use(s)**
Refer to section 1.2

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**8.1. Control parameters**
Not applicable.

**8.2. Exposure controls**
Make sure that the workplace is well aired through effective local ventilation.
Personal protective equipment must comply with current regulations.

| | |
|---|---|
| *Hand Protection* | Protect hands with category III work gloves (OSHA 29 CFR 1910.138).<br>The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.<br>The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable.<br>The gloves' wear time depends on the duration and type of use. |
| *Skin Protection* | Wear category I professional long-sleeved overalls and safety footwear.<br>Wash body with soap and water after removing protective clothing. |
| *Eye Protection* | Wear airtight protective goggles (OSHA 29 CFR 1910.133). |
| *Respiratory Protection* | If the threshold value (e.g., TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose class must be chosen according to the limit of use concentration (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134).<br>In the presence of gases or vapors of various kinds and/or gases or vapors containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.<br>Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered.<br>The protection provided by masks is in any case limited.<br>If the substance considered is odorless or its olfactory threshold is higher than the |

| | |
|---|---|
| | corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134. |
| *Environmental Exposure Controls* | The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.<br>The product must not enter the sewer system or come into contact with surface water or groundwater. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| Appearance | Silicone epoxy |
| Color | Transparent |
| Components | Part A Base & Part B Hardener |
| Mixing Ratio | 4:1 A:B per volume |
| VOC | <240 g/L |
| Solids by Volume | 80% |
| Flash point | > 140°F (60°C) |

## 10. STABILITY AND REACTIVITY

**10.1. Reactivity**
There are no particular risks of reaction with other substances in normal conditions of use.

**10.2. Chemical stability**
The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**
The vapors may also form explosive mixtures in the air.

| | |
|---|---|
| **Xylene (mixture of isomers)** | Stable in normal conditions of use and storage.<br>Reacts violently with: strong oxidants, strong acids, nitric acid, perchlorates.<br>May form explosive mixtures with: air. |

**10.4. Conditions to avoid**
Avoid overheating and all sources of ignition.

**10.5. Incompatible materials**
None based on available information.

**10.6. Hazardous decomposition products**
None based on available information.

## 11. TOXICOLOGICAL INFORMATION

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

**11.1. Information on toxicological effects**

Metabolism, toxicokinetics, mechanism of action and other information
Not classified based on available information.

Information on likely routes of exposure
Not classified based on available information.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Not classified based on available information.

Interactive effects
Not classified based on available information.

Acute toxicity
Acute toxicity, category 4. Harmful if swallowed.

Skin corrosion / irritation
Corrosive for the skin.

Serious eye damage / irritation
Causes serious eye damage.

Respiratory or skin sensitization
Sensitizing for the skin.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT – single exposure
Not classified based on available information.

STOT – repeated exposure
Not classified based on available information.

Aspiration toxicity / hazard
Not classified based on available information.

## 12. ECOLOGICAL INFORMATION

Use this product according to good working practices. Avoid littering. Inform the appropriate authorities should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity**
None based on available information.

**12.2. Persistence and degradability**
None based on available information.

**12.3. Bioaccumulative potential**
None based on available information.

**12.4. Mobility in soil**
None based on available information.

**12.5. Results of PBT and vPvB assessment**
On the basis of available data, the product does not contain any Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bio-accumulative (vPvB) substances.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

| | |
|---|---|
| *Waste from residues* | Reuse, when possible.<br>Unused product should be considered special non-hazardous waste.<br>Disposal must be performed through an authorized waste management firm, in compliance with location, national, and international regulations. |
| *Contaminated Packaging* | Contaminated packaging must be recovered or disposed of in compliance with all waste management regulations. |

## 14. TRANSPORTATION INFORMATION

**ADR/RID**

| | |
|---|---|
| UN/ID No. | UN 2735 |
| Proper shipping name | AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. |
| Class | 8 |
| Packing Group | III |
| Labels | Label 8 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |
| HIN – Kemler: | 80 |
| Limited Quantities: | 5L |
| Tunnel Restriction Code: | (E) |

**IMDG**

| | |
|---|---|
| UN/ID No. | UN 2735 |
| Proper shipping name | AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. |
| Class | 8 |
| Packing Group | III |
| Labels | Label 8 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |
| EMS: | F-A, S-B |
| Limited Quantities: | 5L |

**IATA**

| | |
|---|---|
| UN/ID No. | N/A |
| Proper shipping name | AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. |
| Class | 8 |
| Packing Group | N/A |
| Labels | Label 8 |
| |  |
| Environmental Hazards | NO |
| Environmental Labels | N/A |
| Packing instruction (cargo aircraft) | Maximum Quantity: 60L, Packing instruction: 856 |
| Packing instruction (passenger aircraft) | Maximum Quantity: 5L, Packing instruction: 852 |
| Special precautions for user: | A3, A803 |

## 15. REGULATORY INFORMATION

U.S. Federal Regulations

| | |
|---|---|
| *TSCA* | All components of this product are listed on US Toxic Substances Control Act (TSCA) Inventory considered as "existing" chemical substances in U.S. commerce. |
| *Clean Air Act Sections 112(b), including 602 Class I and 602 Class II Substances* | This product, in compliance to the Act, does not contain any substances regulated as pollutants. |
| *Clean Water Act Priority Toxic Pollutants* | This product, in compliance to the Act, does not contain any substances regulated as pollutants. |
| *Clean Water Act: Toxic Pollutants* | No component(s) listed; in compliance with the List. |
| *DEA List I Chemicals (Precursor Chemicals) and List II Chemicals (Essential Chemicals)* | No component(s) listed; in compliance with the List. |
| *EPA List of Lists 313 Category Code:* | No component(s) listed; in compliance with the List. |
| *EPCRA 302 EHS TPQ CERCLA RQ* | No component(s) listed; in compliance with the List. |
| *EPCRA 313 TRI* | No component(s) listed; in compliance with the List. |
| *RCRA Code* | No component(s) listed; in compliance with the List. |
| *CAA 112 (r) TMP TQ* | No component(s) listed; in compliance with the List. |

State Regulations

Massachusetts / Minnesota / New Jersey / New York / Pennsylvania / California

No component(s) listed.

CA Proposition 65:

This product does not contain any substances known to the State of California to cause cancer, reproductive harm, or birth defects.

## 16. OTHER INFORMATION

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H314** | Causes severe skin burns and eye damage. |
| **H317** | May cause an allergic skin reaction |

LEGEND:

| | |
|---|---|
| 313 CATEGORY CODE | Emergency Planning and Community Right-to Know Act Section 313 Category Code |
| ADR | European Agreement concerning the carriage of Dangerous goods by Road |
| CAA 112 (r) RMP TQ | Risk Management Plan Threshold Quantity (Clean Air Act Section 112(R)) |
| CAS NUMBER | Chemical Abstract Service Number |
| CE50 | Effective concentration (required to induce a 50% effect) |
| CERCLA RQ | Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act) |
| CLP | EC Regulation 1272/2008 |
| DEA | Drug Enforcement Administration |
| EmS | Emergency Schedule |
| EPA | US Environmental Protection Agency |
| EPCRA | Emergency Planning and Community Right-to-Know Act |
| EPCRA 302 EHS TPQ | Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code) |
| EPCRA 304 EHS RQ | Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code) |
| EPCRA 313 TRI | Toxics Release Inventory (Section 313 Category Code) |
| GHS | Globally Harmonized System of classification and labeling of chemicals |

| | |
|---|---|
| IATA DGR | International Air Transport Association Dangerous Goods Regulation |
| IC50 | Immobilization Concentration 50% |
| IMDG | International Maritime Code for dangerous goods |
| IMO | International Maritime Organization |
| LC50 | Lethal Concentration 50% |
| LD50 | Lethal Dose 50% |
| OEL | Occupational Exposure Level |
| PEL | Predicted Exposure Level |
| RCRA Code | Resource Conservation and Recovery Act Code |
| REL | Recommended Exposure Limit |
| RID | Regulation concerning the international transport of dangerous goods by train |
| TLV | Threshold Limit Value |
| TLV CEILING | Concentration that should not be exceeded during any time of occupational exposure. |
| TSCA | Toxic Substances Control Act |
| TWA STEL | Short-term Exposure Limit |
| TWA | Time-weighted Average Exposure Limit |
| VOC | Volatile Organic Compounds |
| WHMIS | Workplace Hazardous Materials Information System |

GENERAL BIBLIOGRAPHY:


- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minnesota Chapter 5206 Department of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323


NOTE FOR USERS:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Purchasers must provide product users with adequate training on how to use chemical products.

ARMUS MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. ARMUS SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHT HELD BY OTHERS.

CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12.
The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified: 02 / 03 / 08 / 11 / 15.