

## Safety Data Sheet

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010)

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### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product Identifier:

Trade Name (as labeled): **Chloroform**  
Part/Item Number: 20390

#### 1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:

Recommended Use: Cleaning Cements from Tools and Equipment  
Restrictions on Use: For professional use only

#### 1.3 Details of the Supplier of the Safety Data Sheet:

Manufacturer/Supplier Name: Sultan Healthcare  
Manufacturer/Supplier Address: 1301 Smile Way  
York, PA, USA  
Manufacturer/Supplier Telephone Number: 1-201-871-1232 or 800-637-8582  
(Product Information)-  
Email address: [customer.service@sultanhc.com](mailto:customer.service@sultanhc.com)

#### 1.4 Emergency Telephone Number:

Emergency Contact Telephone Number: 800-535-5053 (INFOTRAC)  
1-352-323-3500  
(Outside the United States – Call Collect)

### 2. HAZARD(s) IDENTIFICATION

#### 2.1 Classification of the Substance or Mixture

##### GHS SDS Classification

| Health                                                                                                                                                                                                             | Environmental | Physical      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| Carcinogenicity Category 1B H350<br>Acute Toxicity Category 4 H302<br>Skin Irritation Category 2 H315<br>Specific Target Organ Toxicity –Repeat Exposure Category 2 H373<br>Toxic to Reproduction Category 2 H361D | Not Hazardous | Not Hazardous |

**EU Classification (67/548/EEC as amended):** Harmful (Xn) Irritant (Xi) Carcinogen Category 3

**EU Risk (R) and Safety (S) Phrases:** R22, R38, R40, R48/20/22

Refer to Section 16 for the full text of the EU Classifications and R Phrases.

**Labeling Elements:** Contains Chloroform



**Signal Word: Danger!**

| Hazard Statements                                                                                                                                                                                                          | Precautionary Statements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H302 Harmful if swallowed.<br>H315 Causes skin irritation.<br>H350 May cause cancer.<br>H361D Suspected of damaging the unborn child.<br>H373 May cause damage to liver and kidneys through prolonged or repeated exposure | P201 Obtain special instructions before use.<br>P202 Do not handle until all safety precautions have been read and understood.<br>P260 Do not breathe vapors.<br>P264 Wash exposed skin thoroughly after handling.<br>P270 Do not eat, drink or smoke when using this product.<br>P280 Wear protective gloves and protective clothing.<br>P308 + P313 IF exposed or concerned: Get medical advice/attention.<br>P301+ P312 IF SWALLOWED: Call a POISON Center or doctor if you feel unwell.<br>P330 Rinse mouth.<br>P302 + P352 IF ON SKIN: Wash with plenty of soap and water.<br>P332 + P313 If skin irritation occurs: Get medical advice.<br>P362 Take off contaminated clothing and wash before reuse.<br>P405 Store locked up.<br>P501 Dispose of contents/container in accordance with local and national regulations. |

**2.3 Other Hazards:** None

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

#### 3.2 Mixture

| Hazardous Components | C.A.S. # / EC#      | IUPAC Name       | CLP/GHS / EU Classification (1272/2008) (1999/45/EC)                                                                                            | WT % |
|----------------------|---------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Chloroform           | 67-66-3 / 200-663-8 | Trichloromethane | Xn, R22, R48/20/22, R38, R40<br><br>Acute Tox. 4 H302<br>Skin Irrit. 2 H315<br>Repr. 2 H361D<br>Carc. 1B H350<br>Repr 2 H361D<br>STOT RE 2 H373 | 100% |

Refer to Section 16 for the full text of the GHS and H phrases and EU Classifications and R Phrases.

### 4. FIRST-AID MEASURES

| <b>4.1 Description of First Aid Measures:</b> |                                                                                                                                                                                       |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Routes of Exposure</b>                     | <b>First Aid Instructions</b>                                                                                                                                                         |
| <b>Eye</b>                                    | Immediately flush victim's eyes with large quantities of water for at least 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.                      |
| <b>Skin</b>                                   | Wash exposed area thoroughly with large quantities of water for at least 15 minutes. Remove and launder clothing before re-use. Get medical attention if irritation persists.         |
| <b>Inhalation</b>                             | Remove to fresh air. If irritation or other symptoms persist, seek medical attention. If breathing has stopped, administer artificial respiration. Get immediate medical attention.   |
| <b>Ingestion</b>                              | Do not induce vomiting. If conscious and alert, have victim rinse mouth with water. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention. |

| <b>4.2 Most Important Symptoms and Effects, Both Acute and Delayed:</b>                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dizziness, vertigo, headache, tiredness, nausea, vomiting. Prolonged exposure may cause unconsciousness or death. Ingestion will cause severe burning of mouth and throat, pain in chest and abdomen and vomiting. |

| <b>4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed:</b>                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No immediate medical attention required under normal conditions of use.                                                                                                                                                               |
| <b>Note to Physicians (Treatment, Testing, and Monitoring):</b> Treatment of overexposure should be directed at the control of symptoms and clinical conditions. Drinking alcohol or taking phenobarbital can increase toxic effects. |

## 5. FIRE-FIGHTING MEASURES

|                                                                                                                                       |                                                                                     |                                                                                                                                                |                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>5.1 Extinguishing Media</b>                                                                                                        |                                                                                     |                                                                                                                                                |                                                                                       |
| Use media appropriate for surrounding fire.                                                                                           |                                                                                     |                                                                                                                                                |                                                                                       |
| <b>5.2 Special Hazards Arising from the Substance or Mixture:</b>                                                                     |                                                                                     |                                                                                                                                                |                                                                                       |
| Not flammable, however, thermal decomposition products are toxic and corrosive and include hydrogen chloride, phosgene, and chlorine. |                                                                                     |                                                                                                                                                |                                                                                       |
| <b>5.3 Advice for Fire-Fighters:</b>                                                                                                  |                                                                                     |                                                                                                                                                |                                                                                       |
| <b>Fire Fighting Procedures:</b>                                                                                                      |                                                                                     | Cool fire exposed containers and structures with water. Approach fire from upwind to avoid hazardous vapors, and toxic decomposition products. |                                                                                       |
| <b>Precautions for Fire Fighters:</b>                                                                                                 |                                                                                     | Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.                                    |                                                                                       |
| <b>Recommended Protective Equipment for Fire Fighters:</b>                                                                            |                                                                                     |                                                                                                                                                |                                                                                       |
| EYES/FACE                                                                                                                             | SKIN                                                                                | RESPIRATORY                                                                                                                                    | THERMAL                                                                               |
|                                                    |  |                                                            |  |

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal Precautions, Protective Equipment and Emergency Procedures:**

Evacuate unprotected people and ventilate the area. If spill occurs indoors, turn off air conditioning and/or heat systems to prevent vapors from contaminating entire building. Wear appropriate protective clothing as described in Section 8.

**Recommended Personal Protective Equipment for Containment and Clean-up:**

| EYES/FACE                                                                         | SKIN                                                                              | RESPIRATORY                                                                        | THERMAL |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|
|  |  |  |         |

**6.2 Environmental Precautions:**

Prevent spill from entering sewers and water courses. Report releases as required by local and federal authorities.

**6.3 Methods and Material for Containment and Cleaning up:**

Clean up material by absorbing with an inert absorbent material. Place in closed containers for appropriate disposal.

**6.4 Reference to Other Sections:**

Refer to Section 8 for Personal Protective Equipment and Section 13 for Disposal information.

## 7. HANDLING AND STORAGE

**7.1 Precautions for Safe Handling:**

Avoid breathing vapors. Avoid contact with the eyes, skin and clothing. Any clothing or shoes contaminated should be removed immediately, and thoroughly laundered before reuse. Wear protective clothing and equipment as described in Section 8. Use only with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers tightly closed when not in use.

**7.2 Conditions for Safe Storage, Including Any Incompatibilities:**

Keep containers tightly closed when not in use. Store in a dry area. Keep water and moist air from entering containers. Protect from physical damage.

**7.3 Specific End Use (s):** For professional use only.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control Parameters:****Occupational Exposure Limits:**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                     |                                                                                      |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------|
| United States                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 ppm TWA ACGIH TLV;<br>50 ppm Ceiling OSHA PEL                                    |                                                                                      |         |
| Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.5 ppm TWA skin DFG MAK                                                            |                                                                                      |         |
| United Kingdom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2 ppm TWA skin UK OEL                                                               |                                                                                      |         |
| France                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2 ppm INRS VME, 50 ppm VLCT skin                                                    |                                                                                      |         |
| Spain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 ppm TWA VLA-ED skin                                                               |                                                                                      |         |
| Italy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 ppm TWA skin                                                                      |                                                                                      |         |
| European Union                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2 ppm TWA skin EU IOEL                                                              |                                                                                      |         |
| <b>Biological Exposure Limits:</b> None Established                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |                                                                                      |         |
| <b>8.2 Exposure Controls:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |                                                                                      |         |
| <b>Appropriate Engineering Controls:</b> Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits. Do not use in closed or confined areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |                                                                                      |         |
| <b>Individual Protection Measures (PPE)</b><br><b>Specific Eye/face Protection:</b> Chemical goggles recommended.<br><b>Specific Skin Protection:</b> Wear impervious gloves. Wear impervious protective clothing if needed to avoid skin contact and contamination of personal clothing. Recommended glove: Polyvinyl alcohol or viton. Consult glove supplier for thickness and breakthrough times.<br><b>Specific Respiratory Protection:</b> In operations where vapor concentrations exceed the exposure limits an approved respirator should be worn. Selection and use of respiratory equipment must be in accordance with applicable regulations and good industrial hygiene practice.<br><b>Specific Thermal Hazards:</b> Not applicable |                                                                                     |                                                                                      |         |
| <b>Recommended Personal Protective Equipment:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |                                                                                      |         |
| EYES/FACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SKIN                                                                                | RESPRIATORY                                                                          | THERMAL |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |         |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                                                   |                        |                          |                                     |
|-------------------------------------------------------------------|------------------------|--------------------------|-------------------------------------|
| <b>9.1 Information on Basic Physical and Chemical Properties:</b> |                        |                          |                                     |
| <b>Appearance:</b>                                                | Clear colorless liquid | <b>Explosive limits:</b> | Not applicable                      |
| <b>Odor:</b>                                                      | Mildly sweet           | <b>Vapor pressure:</b>   | (mm Hg @ 20 C) 167                  |
| <b>Odor threshold:</b>                                            | 205-307 ppm            | <b>Vapor density:</b>    | (Air = 1) 4.12                      |
| <b>pH:</b>                                                        | Not applicable         | <b>Relative density:</b> | (H <sub>2</sub> O = 1): 1.48 @ 25°C |
| <b>Melting/freezing point:</b>                                    | -63.41°C               | <b>Solubility:</b>       | 1.8 g/100 g water @ 25°C            |

|                                         |                  |                                                |                |
|-----------------------------------------|------------------|------------------------------------------------|----------------|
| <b>Initial boiling point and range:</b> | 59.4°C           | <b>Partition coefficient: n-octanol/water:</b> | 1.97           |
| <b>Flash point:</b>                     | Not flammable    | <b>Auto-ignition temperature:</b>              | Not applicable |
| <b>Evaporation rate:</b>                | (Ether = 1):0.56 | <b>Decomposition temperature:</b>              | Not determined |
| <b>Flammability:</b>                    | Not flammable    | <b>Viscosity:</b>                              | Not determined |
| <b>Explosive Properties:</b>            | None             | <b>Oxidizing Properties:</b>                   | None           |

**9.2 Other Information:** None available

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** Will not polymerize.

**10.2 Chemical Stability:** Stable.

**10.3 Possibility of Hazardous Reactions:** Reacts with strong oxidizers forming phosgene and chlorine gas. Reacts explosively in contact with powdered metals.

**10.4 Conditions to Avoid:** Avoid contact with open flame, electric arcs, or other hot surfaces which can cause thermal decomposition.

**10.5 Incompatible materials:** Strong alkalies, oxidizers, alkali metals, metallic powder, acetone, aluminum, and magnesium.

**10.6 Hazardous Decomposition Products:** Produces hydrogen chloride, phosgene, and chlorine when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects:

#### Potential Health Effects:

**Eyes:** Liquid in the eyes can cause loss of cornea epithelium. Regeneration of cornea cells is prompt and returns to normal in 1 to 3 days. Vapors can cause pain and irritation.

**Skin:** Prolonged or repeated skin contact can cause irritation, defatting of skin, and dermatitis. Absorption of liquid through intact skin is possible and may cause systemic poisoning if contact with skin is prolonged.

**Ingestion:** Ingestion is followed by severe burning of mouth and throat, pain in chest and abdomen, and vomiting. Depending on the amount swallowed, loss of consciousness, liver injury, and death can occur. If vomiting occurs, chloroform can be aspirated into the lungs which can cause chemical pneumonia and systemic effects.

**Inhalation:** Inhalation may cause depression of the central nervous system with dizziness, vertigo, headache, tiredness, nausea. Prolonged exposure may cause unconsciousness or death.

**Chronic Health Effects:** Prolonged or repeated skin contact can cause irritation, defatting of skin, and dermatitis. Chronic overexposure to chloroform has caused liver and kidney toxicity in experimental animals.

**Carcinogenicity:** Chloroform is classified by IARC as a 2B animal carcinogen. NTP has classified chloroform as reasonably anticipated to be a carcinogen. Chloroform has been found to cause liver tumors in male and female mice and liver and kidney tumors in rats.

**Mutagenicity:** Largely negative results have been obtained in Salmonella typhimurium and Escherichia coli (with and without activation), in gene mutation tests in CHO cells and human lymphocytes, in mouse micronucleus tests, and in tests of unscheduled DNA synthesis both in-vitro and in-vivo. Given the large number of sensitive assays that have been used to investigate the genotoxicity of chloroform, the committee considered it noteworthy that the positive responses were so few, and that the positive results were randomly distributed among the various assays. Taken together, WHO concluded that the weight of evidence indicates that neither chloroform nor its metabolites appear to interact directly with DNA or possess genotoxic activity.

**Medical Conditions Aggravated by Exposure:** Alcohol may enhance the toxic effects. History of alcoholism, kidney disorders, liver disorders, or nervous system disorders.

**Acute Toxicity Data:** Oral rat LD50 908-2,180 mg/kg; Inhalation rat LC50 47.702 mg/L/4 hr

**Reproductive Toxicity Data:** Embryotoxic and fetal toxic, and has delayed fetal development in experimental animals. Studies in mice and rats have shown a marginal teratogenic (birth defects) effect. Studies in rabbits have not shown teratogenic effects.

**Specific Target Organ Toxicity (STOT):**

**Single Exposure:** Acute chloroform exposure may result in death by respiratory arrest. Primary toxic response at lower levels of exposure is hepatotoxicity leading to fatty liver and centrilobular necrosis.

**Repeated Exposure:** Chronic overexposure to chloroform has caused liver and kidney toxicity in experimental animals.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity:

LC50; Species: Daphnia magna (Water flea): 29,000µg/L for 48 hr.

LC50; Species: Lepomis macrochirus: 13,300µg/L for 96 hr.

**12.2 Persistence and Degradability:** Chloroform in water and soil is expected to evaporate rapidly to the atmosphere due to its high vapor pressure. Biodegradation can occur when proper microbial populations exist. Chloroform in the atmosphere will degrade by reaction with hydroxyl radicals with a half-life of 80 days.

**12.3 Bio-accumulative Potential:** This material is not expected to bioaccumulate.

**12.4 Mobility in Soil:** Poorly absorbed in soil. Can leach into ground water.

**12.5 Other Adverse Effects:** None known

**12.6 Results of PBT/vPvB Assessment:** Not required

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods:

**Regulations:** Dispose in accordance with local and national environmental regulations.

**Properties (Physical/Chemical) Affecting Disposal:** Thermal degradation will generate chlorine and chlorine compounds.

**Waste Treatment Recommendations:** None needed for normal anticipated use.

## 14. TRANSPORT INFORMATION

|                  | 14.1 UN Number | 14.2 UN Proper Shipping Name | 14.3 Hazard Class(s) | 14.4 Packing Group | 14.5 Environmental Hazards |
|------------------|----------------|------------------------------|----------------------|--------------------|----------------------------|
| <b>DOT</b>       | UN1888         | Chloroform                   | 6.1                  | PG III             | No                         |
| <b>ADR/RID</b>   | UN1888         | Chloroform                   | 6.1                  | PG III             | No                         |
| <b>IMDG</b>      | UN1888         | Chloroform                   | 6.1                  | PG III             | Marine Pollutant-No        |
| <b>IATA/ICAO</b> | UN1888         | Chloroform                   | 6.1                  | PG III             | No                         |

**Note:** In the United States packages with inner packagings with 4 L or less may be re-classed and shipped as Consumer Commodity, ORM-D. Packages containing 10 lbs or more are subject to RQ provisions.

**14.6 Special precautions for user:** None

**14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable – product is transported only in packaged form.

## 15. REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture:

#### U.S. Federal Regulations

**Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):** This product has an RQ of 10 lbs. Many other states have more stringent regulations. Report all spills in accordance with local, state, and federal regulations.

**Toxic Substances Control Act (TSCA):** All of the ingredients in this product are listed on the EPA TSCA Inventory.

**Clean Water Act (CWA):** Chloroform is regulated.

**Clean Air Act (CAA):** Chloroform is regulated

**Superfund Amendments and Reauthorization Act (SARA) Title III Information:**

**SARA Section 311/312 (40 CFR 370) Hazard Categories:**

|                          |     |                           |    |
|--------------------------|-----|---------------------------|----|
| <b>Immediate Hazard:</b> | Yes | <b>Pressure Hazard:</b>   | No |
| <b>Delayed Hazard:</b>   | Yes | <b>Reactivity Hazard:</b> | No |
| <b>Fire Hazard:</b>      | No  |                           |    |

**This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):**

| Components | C.A.S. # | WT % |
|------------|----------|------|
| Chloroform | 67-66-3  | 100% |

#### **State Regulations**

**California:** This product contains the following chemical(s) known to the State of California to cause cancer, birth defects or reproductive harm:

| Components | C.A.S. # | WT % |
|------------|----------|------|
| Chloroform | 67-66-3  | 100  |

#### **International Regulations**

**Canadian Environmental Protection Act:** All the components of this product are listed on the Canadian DSL.

**Canadian Workplace Hazardous Materials Information System (WHMIS):** Class D-1-B, Class D-2-A

**REACH:** The substances in this product comply with the EU REACH regulation as applicable.

### **16. OTHER INFORMATION**

Full text of Classification abbreviations used in Section 2 and 3:

Xn Harmful

Xi Irritant

R22 Harmful if swallowed.

R38 Irritating to skin

R40 Limited evidence of a carcinogenic effect.

R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

Acute Tox. 4 Acute Toxicity Category 4

Skin Irrit. 2 Skin Irritation Category 2

Repr. 2 Toxic to Reproduction Category 2

Carc. 1B Carcinogen Category 1B

STOT RE 2 Specific Target Organ Toxicity Repeat Exposure Category 2

H302 Harmful if swallowed.

H315 Causes skin irritation.

H332 Harmful if inhaled.

H350 May cause cancer.

H361D Suspected of damaging the unborn child.

Data Sources: US NLM ChemID Plus and HSDB, Substance SDS for components, IUCLID Dataset EU Chemical Bureau, ESIS, Country websites for occupational exposure limits.