Section 1 - Product and Company Information

Product Name                      TWEEN 20
Product Number                    274348
Brand                             ALDRICH
Company                           Sigma-Aldrich
Street Address                    3050 Spruce Street
City, State, Zip, Country         SAINT LOUIS MO 63103 US
Technical Phone:                  314 771 5765
Emergency Phone:                  414 273 3850 Ext. 5996
Fax:                              800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                    POLYOXYETHYLENE SORBITAN MONOLAURATE (TWEEN 20)
CAS #                             9005-64-5
SARA 313                          No

Formula                          C58H114O26
Synonyms                         Armotan pml-20 * Capmul * Dxewmulse poe-sml *
                                 Emsorb 6915 * Glycosperse L-20 * Glycosperse L-20X *
                                 Hodag psml-20 * Liposorb L-20 * Poe 20 sorbitan monolaurate *
                                 Polyoxyethylene (20) sorbitan monolaurate * Protasorb L-20 *
                                 PSML * Sorbimacrogol laurate 300 * Sorbitan, monododecanote, poly(oxy-1,2-ethanediyl) 
                                 derivatives * Tween 20
RTECS Number:                    TR7400000

Section 3 - Hazards Identification

HMIS RATING
HEALTH: 0
FLAMMABILITY: 1
REACTIVITY: 0

NFPA RATING
HEALTH: 0
FLAMMABILITY: 1
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If breathing becomes difficult,
call a physician.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
230 °F   110 °C   Method: closed cup

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of vapors.

METHODS FOR CLEANING UP
Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Hand: Protective gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.
### Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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<tbody>
<tr>
<td>Molecular Weight</td>
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<tr>
<td>pH</td>
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<td>BP/BP Range</td>
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<td>MP/MP Range</td>
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<td>Vapor Pressure</td>
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<td>Odor Threshold</td>
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<tr>
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<tr>
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<td>Explosion Limits</td>
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<td>Miscellaneous Data</td>
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<tr>
<td>Solubility</td>
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</tbody>
</table>

N/A = not available

### Section 10 - Stability and Reactivity

**STABILITY**
- Stable: Stable.
- Materials to Avoid: Strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS**
- Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

**HAZARDOUS POLYMERIZATION**
- Hazardous Polymerization: Will not occur

### Section 11 - Toxicological Information

**ROUTE OF EXPOSURE**
- Skin Contact: May cause skin irritation.
- Skin Absorption: May be harmful if absorbed through the skin.
- Eye Contact: May cause eye irritation.
- Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
- Ingestion: May be harmful if swallowed.

**SIGNS AND SYMPTOMS OF EXPOSURE**
- To the best of our knowledge, the chemical, physical, and
toxicological properties have not been thoroughly investigated.

**TOXICITY DATA**

**Oral**  
Rat  
36700 UL/KG  
LD50

**Intraperitoneal**  
Rat  
3850 MG/KG  
LD50

**Intravenous**  
Rat  
770 MG/KG  
LD50

**Oral**  
Mouse  
> 33000 mg/kg  
LD50

**Intraperitoneal**  
Mouse  
2640 MG/KG  
LD50

**Intravenous**  
Mouse  
1420 MG/KG  
LD50

**Oral**  
Hamster  
18 ML/KG  
LD50

**IRRITATION DATA**

**Skin**  
Human  
15 mg  
3D  
I  
Remarks: Mild irritation effect

**CHRONIC EXPOSURE - TERATOGEN**

**Species:** Mouse  
**Dose:** 1 GM/KG  
**Route of Application:** Intraperitoneal  
**Exposure Time:** (9D PREG)  
**Result:** Specific Developmental Abnormalities: Musculoskeletal system.

**Species:** Mouse  
**Dose:** 1 GM/KG  
**Route of Application:** Intraperitoneal  
**Exposure Time:** (9D PREG)  
**Result:** Specific Developmental Abnormalities: Other
developmental abnormalities.

**CHRONIC EXPOSURE - REPRODUCTIVE HAZARD**

- **Species:** Mouse
- **Dose:** 2500 MG/KG
- **Route of Application:** Intraperitoneal
- **Exposure Time:** (9D PREG)
- **Result:** Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

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**Section 12 - Ecological Information**

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**Section 13 - Disposal Considerations**

**APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION**

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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**Section 14 - Transport Information**

**DOT**

- **Proper Shipping Name:** None
- **Non-Hazardous for Transport:** This substance is considered to be non-hazardous for transport.

**IATA**

- **Non-Hazardous for Air Transport:** Non-hazardous for air transport.

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**Section 15 - Regulatory Information**

**UNITED STATES REGULATORY INFORMATION**

- **SARA LISTED:** No
- **TSCA INVENTORY ITEM:** Yes

**CANADA REGULATORY INFORMATION**

- **WHMIS Classification:** This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
- **DSL:** Yes
- **NDSL:** No

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**Section 16 - Other Information**

**DISCLAIMER**

For R&D use only. Not for drug, household or other uses.

**WARRANTY**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.