



# SAFETY DATA SHEET

Revision Date 21-Feb-2023

Version 1

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

**Product Name** FM 591-ES Super Safe Solv  
UN 1897

**UN/ID No**  
**Product Code** 591-ES

### Recommended Use of the Chemical and Restrictions on Use

**Recommended Use** Industrial cleaner.

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

#### **Supplier Address**

Delta Foremost Chemical Corporation  
3915 Air Park St.  
Memphis, Tennessee 38118

### Emergency Telephone Number

**Company Phone Number** (901) 363-4340  
**Emergency Telephone** INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

### Classification

|  |             |
|--|-------------|
| Skin Corrosion/Irritation                        | Category 2  |
| Aspiration toxicity                              | Category 1  |
| Acute toxicity - Inhalation (Vapors)             | Category 4  |
| Serious Eye Damage/Eye Irritation                | Category 2  |
| Germ Cell Mutagenicity                           | Category 2  |
| Carcinogenicity                                  | Category 1A |
| Specific target organ toxicity (single exposure) | Category 3  |
| Flammable liquids                                | Category 3  |

### Signal Word

**DANGER**

### Hazard Statements

Causes skin irritation  
May be fatal if swallowed and enters airways  
Flammable liquid and vapor  
Harmful if inhaled  
Causes serious eye irritation  
Suspected of causing genetic defects  
May cause cancer  
May cause respiratory irritation. May cause drowsiness or dizziness  
Very toxic to aquatic life with long lasting effects

**Appearance** Clear Liquid**Physical State** Liquid**Odor** Citrus**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
 Keep container tightly closed  
 Ground/bond container and receiving equipment  
 Use explosion-proof equipment  
 Use only non-sparking tools  
 Take precautionary measures against static discharge  
 Obtain special instructions before use  
 Avoid breathing dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

If skin irritation occurs: Get medical advice/attention  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse  
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 Do NOT induce vomiting  
 In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store locked up  
 Store in a well-ventilated place.

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards Not Otherwise Classified (HNOC)**

May be harmful if swallowed  
 May be harmful in contact with skin

**Other Hazards**

Very toxic to aquatic life with long lasting effects  
 Very toxic to aquatic life

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name            | CAS No     | Weight-%    |
|--------------------------|------------|-------------|
| d-Limonene               | 5989-27-5  | Proprietary |
| Odorless Mineral Spirits | 68551-17-7 | Proprietary |
| Tetrachloroethylene      | 127-18-4   | Proprietary |
| Deodorized Kerosene      | 64742-88-7 | Proprietary |

Product contains a proprietary mixture of ingredients.

### 4. FIRST AID MEASURES

**First Aid Measures**

|                       |   |
|-----------------------|---|
| <b>General Advice</b> | Provide this SDS to medical personnel for treatment.  |
| <b>Eye Contact</b>    | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get immediate medical advice/attention.        |
| <b>Skin Contact</b>   | Wash affected areas with copious amount of soap and water. If there is dryness and skin irritation, use a skin cream or Vaseline on skin. If irritation persists, see physician.        |
| <b>Inhalation</b>     | Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.                                |
| <b>Ingestion</b>      | Do not induce vomiting unless directed by medical personnel. If vomiting occurs, lean patient forward to maintain an open airway & prevent aspiration. Get immediate medical attention. |

**Most Important Symptoms and Effects, both Acute and Delayed**

|                 |   |
|-----------------|---|
| <b>Symptoms</b> | May cause skin and eye irritation. Direct contact with eyes may cause temporary irritation. May cause nausea, vomiting, stomach ache, and diarrhea. May cause respiratory irritation. |
|-----------------|---|

**Indication of any Immediate Medical Attention and Special Treatment Needed**

|                           |  |
|---------------------------|--|
| <b>Note to Physicians</b> | Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. |
|---------------------------|--|

**5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Foam, carbon dioxide or dry chemical extinguisher. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** Water.

**Specific Hazards Arising from the Chemical**

Closed containers may explode due to buildup of pressure when exposed to extreme heat.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water may be used to cool closed containers to prevent pressure buildups and possible ignition or explosion when exposed to extreme heat.

**6. ACCIDENTAL RELEASE MEASURES****Personal Precautions, Protective Equipment and Emergency Procedures**

|                             |  |
|-----------------------------|--|
| <b>Personal Precautions</b> | Wear protective clothing as described in Section 8 of this safety data sheet. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). |
|-----------------------------|--|

**Methods and Material for Containment and Cleaning Up**

|                                |   |
|--------------------------------|---|
| <b>Methods for Containment</b> | Prevent further leakage or spillage if safe to do so. Absorb spill with inert material (e.g. dry sand or earth).  |
| <b>Methods for Cleaning Up</b> | Use clean non-sparking tools to collect absorbed material. Sweep up absorbed material and shovel into suitable containers for disposal. Discard any product, residue, disposable container or liner in full compliance with federal, state, and local regulations. For waste disposal, see section 13 of the SDS. |

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

#### **Advice on Safe Handling**

Handle in accordance with good industrial hygiene and safety practice. Wash face, hands, and any exposed skin thoroughly after handling. Use personal protection recommended in Section 8. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Keep container closed when not in use.

### Conditions for Safe Storage, Including any Incompatibilities

#### **Storage Conditions**

Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up.

#### **Incompatible Materials**

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

The following information is given as general guidance

| Chemical Name                     | ACGIH TLV                    | OSHA PEL  | NIOSH IDLH    |
|-----------------------------------|------------------------------|---|---------------|
| Tetrachloroethylene<br>127-18-4   | STEL: 100 ppm<br>TWA: 25 ppm | TWA: 100 ppm<br>(vacated) TWA: 25 ppm<br>(vacated) TWA: 170 mg/m <sup>3</sup><br>Ceiling: 200 ppm | IDLH: 150 ppm |
| Deodorized Kerosene<br>64742-88-7 | TWA: 200 ppm                 |   |               |

### Appropriate Engineering Controls

#### **Engineering Controls**

Good general mechanical ventilation. Local exhaust recommended.

### Individual Protection Measures, such as Personal Protective Equipment

#### **Eye/Face Protection**

Goggles or face shield.

#### **Skin and Body Protection**

Wear rubber or neoprene gloves, Rubber apron.

#### **Respiratory Protection**

For normal use, none necessary.

#### **General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

**Physical State**  
**Appearance**  
**Color**

Liquid  
Clear Liquid  
Colorless

**Odor**  
**Odor Threshold**

Citrus  
Not determined

#### Property

#### Values

#### Remarks • Method

pH

Not determined

Melting Point/Freezing Point

Not applicable

Boiling Point/Boiling Range

176 °C / 348.8 °F

Flash Point

43.33-46.11 °C / 110-115 °F

Tag Closed Cup

|                              |                 |           |
|------------------------------|-----------------|-----------|
| Evaporation Rate             | Not applicable  |           |
| Flammability (Solid, Gas)    | Not determined  |           |
| Upper Flammability Limits    | Not established |           |
| Lower Flammability Limit     | Not established |           |
| Vapor Pressure               | Not established |           |
| Vapor Density                | Not established |           |
| Specific Gravity             | 0.910           | (1=Water) |
| Water Solubility             | Not soluble     |           |
| Solubility in Other Solvents | Not determined  |           |
| Partition Coefficient        | Not determined  |           |
| Autoignition Temperature     | Not determined  |           |
| Decomposition Temperature    | Not determined  |           |
| Kinematic Viscosity          | Not determined  |           |
| Dynamic Viscosity            | Not determined  |           |
| Explosive Properties         | Not determined  |           |
| Oxidizing Properties         | Not determined  |           |

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to Avoid

Heat, flames and sparks.

### Incompatible Materials

Strong oxidizing agents.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

#### **Product Information**

#### **Eye Contact**

Causes serious eye irritation.

#### **Skin Contact**

Causes skin irritation. May be harmful in contact with skin.

#### **Inhalation**

Harmful if inhaled.

#### **Ingestion**

May be harmful if swallowed. Potential for aspiration if swallowed.

### Component Information

| Chemical Name           | Oral LD50            | Dermal LD50             | Inhalation LC50 |
|-------------------------|----------------------|-------------------------|-----------------|
| d-Limonene<br>5989-27-5 | = 4400 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | -               |

|                                   |                       |   |                         |
|-----------------------------------|-----------------------|---|-------------------------|
| Tetrachloroethylene<br>127-18-4   | = 2629 mg/kg ( Rat )  | - | = 4000 ppm ( Rat ) 4 h  |
| Deodorized Kerosene<br>64742-88-7 | > 5,000 mg/kg ( Rat ) | - | > 5.28 mg/L ( Rat ) 4 h |

**Information on Physical, Chemical and Toxicological Effects****Symptoms**

Please see section 4 of this SDS for symptoms.

**Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure****Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

| Chemical Name                   | ACGIH | IARC     | NTP                    | OSHA |
|---------------------------------|-------|----------|------------------------|------|
| d-Limonene<br>5989-27-5         | -     | Group 3  | -                      | X    |
| Tetrachloroethylene<br>127-18-4 | A3    | Group 2A | Reasonably Anticipated | X    |

*IARC (International Agency for Research on Cancer)**Group 3 IARC components are "not classifiable as human carcinogens"**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**X - Present***Aspiration Hazard**

May be fatal if swallowed and enters airways.

**Numerical Measures of Toxicity**

Not determined

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

| Chemical Name                   | Algae/aquatic plants                                      | Fish  | Toxicity to microorganisms   | Crustacea   |
|---------------------------------|---|---|--|---|
| d-Limonene<br>5989-27-5         |   | 0.619 - 0.796: 96 h<br>Pimephales promelas mg/L<br>LC50 flow-through 35: 96 h<br>Oncorhynchus mykiss mg/L<br>LC50   |  |   |
| Tetrachloroethylene<br>127-18-4 | 500: 96 h<br>Pseudokirchneriella<br>subcapitata mg/L EC50 | 12.4 - 14.4: 96 h Pimephales<br>promelas mg/L LC50 flow-<br>through 8.6 - 13.5: 96 h<br>Pimephales promelas mg/L<br>LC50 static 11.0 - 15.0: 96 h<br>Lepomis macrochirus mg/L<br>LC50 static 4.73 - 5.27: 96 h<br>Oncorhynchus mykiss mg/L<br>LC50 flow-through | EC50 = 100 mg/L 24 h<br>EC50 = 112 mg/L 24 h<br>EC50 = 120.0 mg/L 30 min | 6.1 - 9.0: 48 h Daphnia<br>magna mg/L EC50 Static |

**Persistence and Degradability**

Not determined

**Bioaccumulation**

Not determined

**Mobility**

| Chemical Name                   | Partition Coefficient |
|---------------------------------|-----------------------|
| Tetrachloroethylene<br>127-18-4 | 2.53 - 2.88           |

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS****Waste Treatment Methods****Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

| Chemical Name                   | California Hazardous Waste Status |
|---------------------------------|-----------------------------------|
| d-Limonene<br>5989-27-5         | Toxic                             |
| Tetrachloroethylene<br>127-18-4 | Toxic                             |

**14. TRANSPORT INFORMATION****Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

UN/ID No UN1897  
 Proper Shipping Name Tetrachloroethylene Solution  
 Hazard Class 6.1  
 Packing Group III

**IATA**

UN/ID No UN1897  
 Proper Shipping Name Tetrachloroethylene Solution  
 Hazard Class 6.1  
 Packing Group III

**IMDG**

UN/ID No UN1897  
 Proper Shipping Name Tetrachloroethylene Solution  
 Hazard Class 6.1  
 Packing Group III

**15. REGULATORY INFORMATION****International Inventories**

Not Determined

**Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*  
*DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List*  
*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*  
*ENCS - Japan Existing and New Chemical Substances*  
*IECSC - China Inventory of Existing Chemical Substances*  
*KECL - Korean Existing and Evaluated Chemical Substances*  
*PICCS - Philippines Inventory of Chemicals and Chemical Substances*

**US Federal Regulations**

**CERCLA**

| Chemical Name                   | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ)  |
|---------------------------------|--------------------------|----------------|---|
| Tetrachloroethylene<br>127-18-4 | 100 lb 1 lb              |                | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ RQ 1 lb final<br>RQ<br>RQ 0.454 kg final RQ |

**SARA 313**

| Chemical Name                   | CAS No   | Weight-%    | SARA 313 - Threshold Values % |
|---------------------------------|----------|-------------|-------------------------------|
| Tetrachloroethylene<br>127-18-4 | 127-18-4 | Proprietary | 0.1                           |

**CWA (Clean Water Act)**

| Component                       | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Tetrachloroethylene<br>127-18-4 |                             | X                      | X                         |                            |

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical Name                   | California Proposition 65 |
|---------------------------------|---------------------------|
| Tetrachloroethylene<br>127-18-4 | Carcinogen                |

**U.S. State Right-to-Know Regulations**

| Chemical Name                          | New Jersey | Pennsylvania | Massachusetts |
|--|------------|--------------|---------------|
| Odorless Mineral Spirits<br>68551-17-7 | X          |              | X             |
| Tetrachloroethylene<br>127-18-4        | X          | X            | X             |
| Deodorized Kerosene<br>64742-88-7      | X          | X            | X             |

|                              |
|------------------------------|
| <b>16. OTHER INFORMATION</b> |
|------------------------------|

**NFPA****Health Hazards**

2

**Flammability**

1

**Instability**

0

**Special Hazards**

Not determined

**HMIS****Health Hazards**

2

**Flammability**

1

**Physical Hazards**

0

**Personal Protection**

Not determined

Revision Date

21-Feb-2023

Revision Note

New format

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet