SECTION 1: Identification

1.1 Product identifier
Trade Name: VELSIFLEX® 290

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

1.2.1 Relevant identified uses
Industrial applications: Plasticizer.

1.2.2 Uses advised against
No specific uses advised against have been identified.

1.3 Details of the supplier of the safety data sheet
Velsicol Chemical LLC
10400 W. Higgins Road, Suite 303
Rosemont, Illinois 60018 USA
Phone: (847) 813-7888
Fax: (847) 768-3227
Email: customerservice@velsicol.com

1.4 Emergency telephone number
Outside the continental U.S.A. call CHEMTREC 1-800-424-9300 (24 hours)
In the continental U.S.A. call CHEMTREC 1-800-424-9300 (24 hours)

SECTION 2: Hazard(s) identification

2.1 Hazard classification and Hazard statement(s)
Not classified as hazardous substance.

Inhalation and skin contact are expected to be the primary routes of occupational exposure to VELSIFLEX® 290. This material is not expected to cause significant adverse human health effects when used in accordance with good industrial hygiene and safety practices are followed. Repeated or prolonged exposure is not known to aggravate any existing medical condition.

2.2 Precautionary statements
Avoid release to the environment
Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Signal Word
No signal word

2.4 Pictograms
No Pictogram

2.3 Other hazards
None known
SECTION 3: Composition/information on ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS number</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoate esters</td>
<td>Proprietary</td>
<td>Proprietary</td>
</tr>
</tbody>
</table>

3.2 Mixtures
Mixture of benzoate esters

SECTION 4: First-aid measures

4.1 Description of first aid measures

4.1.1 General information:
Inhalation and skin contact are expected to be the primary routes of occupational exposure to VELSIFLEX® 290. This material is not expected to cause significant adverse human health effects when used in accordance with good industrial hygiene and safety practices are followed.

Chronic health effects: None known.
Carcinogenic status: Not listed or regulated by IARC, NTP, OSHA, or ACGIH.
None expected reproductive effects.

4.1.2 Following inhalation:
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Seek medical attention if symptoms occur.

4.1.3 Following skin contact:
Flush the area with plenty of water. Remove material from clothing. Wash clothing before reuse.

4.1.4 Following eye contact:
Flush with plenty of water. Seek medical attention if irritation persists.

4.1.5 Following ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

4.1.6 Self-protection of the first aider:
Wear protective gloves/protective clothing/eye protection/face protection if possible. Do not get in eyes, on skin, or on clothing.

4.1.7 Notes for the doctor
Not available.

4.2 Most important symptoms and effects, both acute and delayed
None known

4.3 Indication of any immediate medical attention and special treatments needed
None known
Treat symptomatically
SECTION 5: Fire-fighting measures

5.1 Extinguishing media
Flammability Properties: Non-flammable liquid. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Suitable extinguishing media: Use water spray, dry chemicals, CO2, or foam.

Unsuitable extinguishing media: Do not use water jet

5.2 Special hazards arising from the substance or mixture
Products of combustion are carbon oxides (CO, CO2).

5.3 Advice for fire fighters
Firefighters and others who may be exposed to products of combustion should wear full firefighting turn out gear and self-contained breathing apparatus. Firefighting equipment should be thoroughly decontaminated after use.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Wearing of 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 personal clothing; Evacuate the danger area or to consult an expert.

6.1.2. For emergency personnel
Wearing of 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 personal clothing; Removal of ignition sources, provision of sufficient ventilation;

6.2 Environmental precautions
Do not allow to enter sewers / surface or ground water. In case of spillage to water course or public sewers inform responsible authorities.

6.3 Methods and materials for containment and clearing up
Small Spill - Absorb with an inert material and place in an appropriate waste disposal container. Large Spill - Stop the leak if possible. Remove all ignition sources. Ventilate the area involved. Absorb with an inert material and put the spilled material in an appropriate waste disposal container.

6.4 References to other sections
See sections 8 and 13 for further advice.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures: Do not handle until all safety precautions have been read and understood; Wear suitable protective clothing, gloves and eye/face protection.

Measures to prevent aerosol and dust generation: Provide ventilation if necessary to minimize exposure. Do not breathe dust/fumes/gas/mist/vapours/spray;
Measures to protect the environment: Avoid release to the environment.

Advice on general occupational hygiene: Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing. Keep away from sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities
Store in well ventilated area away from sources of ignition; Keep container tightly closed. Keep away from heat, sparks and open flames.

7.3 Specific end uses(s)
Plasticizer products will soften plastic materials and as a result they should not be transported in piping systems constructed from these materials.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters
No national limits have been set for Occupational Exposure Limit values of this product.

8.2 Exposure controls
Ventilation must be adequate to maintain the ambient workplace atmosphere.

8.2.1 Appropriate engineering controls:
Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation.

8.2.2 Personal protective equipment:
Do not eat, drink, or smoke whilst working. Keep away from foodstuffs, beverages and feed. Remove all contaminated clothing. Wash hands before breaks and at the end of work.

Respiratory protection
Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Hand Protection
Chemical resistant coveralls, gloves and boot covers. If gloves are damaged during use, remove immediately and wash hands before replacing with new gloves.

Eye and face protection
Safety glasses should be worn when handling this substance.

Skin protection
Aprons or coveralls are recommended. These should be changed after use or if contaminated.

8.3 Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
Appearance: Clear Liquid, colorless to light yellow
Odour: mild ester-like
Odour threshold: no data available
Bulk Density: no data available
pH: no data available
Melting/Freezing point: < -3°C
Pour Point: -17 °C
Boiling point: > 300°C @ 5mm Hg
Flashpoint: >190°C (Closed Cup)
Evaporation rate: no data available
Flammability: no data available
Vapor pressure: no data available
Vapour density: no data available
Specific Gravity: 1.14-1.15 g/cm3 at 25°C
Refractive index: 1.535 at 25°C
Solubility in water: negligible
Solubility in other solvents: no data available
Surface tension: no data available
Partition coefficient: no data available
n-octanol/water
Volatile by weight: no data available
Auto ignition temperature: no data available
Decomposition temperature: no data available
Viscosity: 70-100 mPa.s at 25°C
Explosive properties: no data available
Oxidising properties: no data available
Dissociation Constant: no data available
Molecular Weight (cal.): 290

9.2 Other information
Not available

SECTION 10: Stability and reactivity

10.1 Reactivity
Not a reactive substance and no reactive hazards are expected.

10.2 Chemical stability
This substance is stable under normal condition

10.3 Possibility of hazardous reactions
No hazardous reactions expected under normal conditions of use.

10.4 Conditions to avoid
Excessive heat and ignition sources.

10.5 Incompatible materials
Avoid strong acids, bases, and oxidizing agents. Avoid contact with phenols.

10.6 Hazardous decomposition products
Carbon dioxide, carbon monoxide and hydrocarbons.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Velsicol Chemical LLC has not conducted toxicity tests on VELSIFLEX® 290. However, toxicity data are available on the components of this material.

No data available for this product, but there are information for the components.

Specified benzoate esters:

**Acute toxicity**
All components have acute median lethal oral doses LD50 > 3900 mg/kg body weight.

All components have acute lethal dermal dose LD50 > 2000 mg/kg body weight.

**Skin corrosion/irritation**
Components are not irritating to the skin and are not considered to be a primary skin irritant.

**Serious eye damage/irritation**
Components are slight irritants to the eyes (Rabbit, 4 h)

**Respiratory/skin sensitisation**
Components do not produce evidence of skin sensitization (delayed contact hypersensitivity) (Species: Guinea pig)

**Germ cell mutagenicity**
Components showed no evidence of mutagenic activity in tests.

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**STOT-single exposure**
No data available

**STOT-repeated exposure**
The NOEL established for dietary study is 1000 – 10000 mg/kg/day.

**Aspiration hazard**
No data available

### SECTION 12: Ecological information

#### 12.1. Toxicity
Velsicol Chemical LLC has not conducted toxicity tests on VELSIFLEX® 290. However, toxicity data are available on the components of this material.

No data available for this product, but there are information for the components.

Specified benzoate esters:

**Acute toxicity**
Fish (96 h), LC50 > 2.9 mg/l
Daphnia and other aquatic invertebrates (48h), EL50 > 6.7 mg/l
Algae (Growth rate, 72 h), EL50 > 4.9 mg/l

12.2 **Persistence and degradability**
Components are readily biodegradable (CO2 Evolution Test) and therefore are not persistence.

12.3 **Bio-accumulative potential**
No data available.

12.4 **Mobility in soil**
No data available.

12.5 **Results of PBT and vPvB assessment**
Components are not PBT or vPvB based upon experimental data.

12.6 **Other adverse effects**
No information available.

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**
Recycle to process, if possible. Consult your local or regional authorities for disposal options.

**SECTION 14: Transport information**

The substances are not regulated as a dangerous good under ADR, IMDG, IATA and DOT.

**SECTION 15: Regulatory information**

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
All chemical components in this material are included on or exempted from listing on the following inventories: Australia (AICS), Canada (DSL), China (IECSC), Europe (ELNECS), Japan(ENCS), Mexico(INSQ), Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), & United States (TSCA)

15.2 **Chemical Safety Assessment**
**HMIS Rating**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity (Stability)</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

**NFPA Rating**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity (Stability)</th>
<th>Specific Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

Key: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme. An asterisk appearing after the HMIS Health numerical rating denotes a chronic hazard.

**SECTION 16: Other information**

16.1 **Indication of changes**
This is the first SDS under OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))
September 26, 2017

Update section 2 to remove Aquatic Chronic, category 3 classification: May 16, 2018

16.2 **Key literature references and sources for data**
Product Data Sheet and SDS information from manufacturer.

16.3 Classification for mixtures and used evaluation method according to Hazard Communication Standard (HCS)(29 CFR 1910.1200(g)),


16.5 Further information
To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.