# F631 VLP®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Issue date: 03/21/2024 Version: 1.0

## SECTION 1: Identification

### 1.1. Identification

Product form : Mixture

Product name : F631 VLP®

Product code : 60109, 60509, 61209, 61Z09, 61Z09-B

### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Coating

### 1.3. Supplier

Plasti Dip International, Inc.
3920 Pheasant Ridge Drive
Blaine, MN 55449
Phone - (763) 785-2156

### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (US); +1 703-741-5970 (International)

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS US classification**

Flam. Liq. 2 H225
Eye Dam. 1 H318
Skin Sens. 1 H317
Carc. 2 H351
STOT SE 3 H336
STOT SE 3 H335

### 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H225 - Highly flammable liquid and vapor
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer

Precautionary statements (GHS US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof ventilating, lighting, electrical equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear eye protection, face protection, protective clothing, protective gloves..
P302+P352 - If on skin: Wash with plenty of water.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - If exposed or concerned: Get medical advice/attention.

P310 - Immediately call poison center/doctor/...
P312 - Call a POISON CENTER, a doctor if you feel unwell.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use Carbon dioxide ($CO_2$), alcohol resistant foam, dry sand, sand, dry chemical to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Product identifier | % |
|---|---|---|
| Tetrahydrofuran | (CAS-No.) 109-99-9 | 45 – 70 |
| cyclohexanone | (CAS-No.) 108-94-1 | 1 – 5 |
| Methyl ethyl ketone | (CAS-No.) 78-93-3 | 0.1 – 1 |
| Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate | (CAS-No.) 41556-26-7 | 0.1 – 1 |
| Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester | (CAS-No.) 82919-37-7 | 0.1 – 1 |

***In accordance with paragraph (i) of the OSHA Hazard Communication Standard (29 CFR §1910.1200), the specific chemical identity or exact weight % has been withheld as a trade secret**

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing if pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Get medical attention if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes serious eye damage. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. May cause respiratory irritation. May cause an allergic skin reaction. Suspected of causing cancer.

Symptoms/effects after inhalation : May cause drowsiness or dizziness. May cause respiratory irritation.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : May cause gastrointestinal irritation.

Chronic symptoms : Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor.

Explosion hazard : Heating may cause an explosion.

Reactivity : No dangerous reactions known under normal conditions of use.

### 5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Other information : This material is flammable and may be ignited by heat, sparks, or static electricity.

## SECTION 6: Accidental release measures

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

General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

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

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Exclude sources of ignition and ventilate the area. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (see Section 13).

### 6.4. Reference to other sections

See Sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Handle in accordance with good industrial hygiene and safety procedures. Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes and clothing. Keep away from sources of ignition - No smoking. Provide good ventilation in process area to prevent formation of vapor. Do not breathe mist, fume. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Use appropriate container to avoid environmental contamination.

Storage conditions : Store in a dry, cool and well-ventilated place. Keep the container tightly closed. Keep away from ignition sources.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Tetrahydrofuran (109-99-9)** | | |
|---|---|---|
| ACGIH | ACGIH OEL TWA [ppm] | 50 ppm |
| ACGIH | ACGIH OEL STEL [ppm] | 100 ppm |
| OSHA | OSHA PEL (TWA) [1] | 590 mg/m³ |
| OSHA | OSHA PEL (TWA) [2] | 200 ppm |
| OSHA | OSHA PEL (STEL) [1] | 735 mg/m³ |

| **Tetrahydrofuran (109-99-9)** | | |
|---|---|---|
| OSHA | OSHA PEL (STEL) [2] | 250 ppm |

| **cyclohexanone (108-94-1)** | | |
|---|---|---|
| ACGIH | ACGIH OEL TWA [ppm] | 20 ppm |
| ACGIH | ACGIH OEL STEL [ppm] | 50 ppm |
| ACGIH | Remark (ACGIH) | TLV® Basis: Eye & URT irr. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans) |
| ACGIH | Regulatory reference | ACGIH 2022 |
| OSHA | OSHA PEL (TWA) [1] | 200 mg/m³ |
| OSHA | OSHA PEL (TWA) [2] | 50 ppm |
| OSHA | Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |
| IDLH | IDLH [ppm] | 700 ppm |
| NIOSH | NIOSH REL (TWA) | 100 mg/m³ |
| NIOSH | NIOSH REL TWA [ppm] | 25 ppm |
| NIOSH | US-NIOSH chemical category | SK: DIR(COR) Oct 2020 |

| **Methyl ethyl ketone (78-93-3)** | | |
|---|---|---|
| ACGIH | ACGIH OEL TWA [ppm] | 200 ppm |
| ACGIH | ACGIH OEL STEL [ppm] | 300 ppm |
| ACGIH | Remark (ACGIH) | TLV® Basis: Embryo/fetal dam; URT irr; headache; dizziness. Notations: Skin; BEI |
| ACGIH | Regulatory reference | ACGIH 2024 |
| OSHA | OSHA PEL (TWA) [1] | 590 mg/m³ |
| OSHA | OSHA PEL (TWA) [2] | 200 ppm |
| OSHA | OSHA PEL (STEL) [1] | 885 mg/m³ |
| OSHA | OSHA PEL (STEL) [2] | 300 ppm |
| OSHA | Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |
| IDLH | IDLH [ppm] | 3000 ppm |
| NIOSH | NIOSH REL (TWA) | 590 mg/m³ |
| NIOSH | NIOSH REL TWA [ppm] | 200 ppm |
| NIOSH | NIOSH REL (STEL) | 885 mg/m³ |
| NIOSH | NIOSH REL STEL [ppm] | 300 ppm |

| **Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate (41556-26-7)** | | |
|---|---|---|
| ACGIH | Remark (ACGIH) | OELs not established |
| OSHA | Remark (OSHA) | OELs not established |

| **Decanedioic acid, methyl 1,2,2,6,6-pentamethyl-4-piperidinyl ester (82919-37-7)** | | |
|---|---|---|
| ACGIH | Remark (ACGIH) | OELs not established |
| OSHA | Remark (OSHA) | OELs not established |

**8.2. Appropriate engineering controls**

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

### 8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment symbol(s):**

**Personal protective equipment:**

Gloves. Protective goggles. Protective clothing.

**Hand protection:**

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Change contaminated gloves immediately. Suitable gloves for this specific application can be recommended by the glove supplier.

**Eye protection:**

Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

**Skin and body protection:**

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

**Respiratory protection:**

Use NIOSH (or other equivalent national standard) -approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

## SECTION 9: Physical and chemical properties

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

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Color | : | Clear |
| Odor | : | Characteristic |
| Odor threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| Freezing point | : | No data available |
| Boiling point | : | -20°C (-4°F) (Tetrahydrofuran ) |
| Flash point | : | No data available |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Vapor pressure | : | No data available |
| Relative vapor density at 20°C | : | No data available |
| Relative density | : | No data available |
| Solubility | : | No data available |
| Partition coefficient n-octanol/water (Log Pow) | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, kinematic | : | No data available |
| Viscosity, dynamic | : | No data available |
| Explosion limits | : | No data available |
| Explosive properties | : | No data available |
| Oxidizing properties | : | No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

No data available.

### 10.5. Incompatible materials

No data available.

### 10.6. Hazardous decomposition products

No data available.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

| **Tetrahydrofuran (109-99-9)** | |
|---|---|
| LC50 Inhalation - Rat | 5309 mg/l/4h |

| **cyclohexanone (108-94-1)** | |
|---|---|
| LD50 oral rat | 1544 mg/kg |
| LD50 dermal rat | 947 mg/kg |
| LD50 dermal rabbit | 947 mg/kg (Source: JAPAN_GHS) |
| LC50 Inhalation - Rat | > 6.2 mg/l/4h |
| LC50 Inhalation - Rat [ppm] | 8000 ppm/4h |

| **Methyl ethyl ketone (78-93-3)** | |
|---|---|
| LD50 oral rat | 2483 mg/kg (Source: JAPAN_GHS) |
| LD50 dermal rabbit | 5000 mg/kg (Source: JAPAN_GHS) |
| LC50 Inhalation - Rat [ppm] | 11700 ppm/4h |

| **Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate (41556-26-7)** | |
|---|---|
| LD50 oral rat | 2615 mg/kg |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

Reproductive toxicity : Not classified

STOT-single exposure : May cause drowsiness or dizziness. May cause respiratory irritation.

STOT-repeated exposure : Not classified

| **cyclohexanone (108-94-1)** | |
|---|---|
| NOAEL (oral,rat,90 days) | 143 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) |

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects : Causes serious eye damage. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure. May cause respiratory irritation. May cause an allergic skin reaction. Suspected of causing cancer.

Symptoms/effects after inhalation : May cause drowsiness or dizziness. May cause respiratory irritation.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : May cause gastrointestinal irritation.

Chronic symptoms : Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No information available.

### 12.2. Persistence and degradability

Persistence and degradability No information available.

### 12.3. Bioaccumulative potential

Bioaccumulative potential No information available.

### 12.4. Mobility in soil

Ecology - soil No information available.

### 12.5. Other adverse effects

Other adverse effects : No data available.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Transport document description (DOT) : UN1139 Coating solution, 3, II

UN-No.(DOT) : UN1139

Proper Shipping Name (DOT) : Coating solution

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 3 - Flammable liquid


DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : B - (i) The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) ‘‘On deck only’’ on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Other information : No supplementary information available.

**Transportation of Dangerous Goods**

Transport document description (TDG) : UN1139 Coating Solution, 3, II

UN-No. (TDG) : UN1139

Proper Shipping Name (TDG) : Coating Solution

TDG Primary Hazard Classes : 3 - Class 3 - Flammable Liquids

Packing group (TDG) : II - Medium Danger

**Transport by sea (IMDG)**

| | | |
|---|---|---|
| Transport document description (IMDG) | : | UN UN1139 Coating Solution, 3, II |
| UN-No. (IMDG) | : | UN1139 |
| Proper Shipping Name (IMDG) | : | Coating Solution |
| Class (IMDG) | : | 3 - Flammable liquids |
| Packing group (IMDG) | : | II - substances presenting medium danger |

**Air transport (IATA)**

| | | |
|---|---|---|
| Transport document description (IATA) | : | UN UN1139 Coating Solution, 3, II |
| UN-No. (IATA) | : | UN1139 |
| Proper Shipping Name (IATA) | : | Coating Solution |
| Class (IATA) | : | 3 - Flammable Liquids |
| Packing group (IATA) | : | II - Medium danger |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **F631 VLP®** | |
|---|---|
| All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt. | |
| SARA Section 311/312 Hazard Classes | Physical hazard - Flammable (gases, aerosols, liquids, or solids)<br>Health hazard - Serious eye damage or eye irritation<br>Health hazard - Skin sensitizer<br>Health hazard - Carcinogenicity<br>Health hazard - Specific target organ toxicity (single or repeated exposure) |

| **Tetrahydrofuran (109-99-9)** | |
|---|---|
| Subject to reporting requirements of United States SARA Section 313 | |
| CERCLA RQ | 1000 lb |

| **cyclohexanone (108-94-1)** | |
|---|---|
| Subject to reporting requirements of United States SARA Section 313 | |
| CERCLA RQ | 5000 lb |

| **Methyl ethyl ketone (78-93-3)** | |
|---|---|
| Not subject to reporting requirements of the United States SARA Section 313 | |
| CERCLA RQ | 5000 lb |

| **Polyvinyl chloride (9002-86-2)** | |
|---|---|
| EPA TSCA Regulatory Flag | XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711). |

### 15.2. International regulations

| **Vinyl chloride (75-01-4)** | |
|---|---|
| Toxic Substance (CEPA – Schedule I) | Yes |

### 15.3. US State regulations

⚠ **WARNING:** This product can expose you to Vinyl chloride, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

| Component | Carcinogenicity | Developmental toxicity | Reproductive toxicity male | Reproductive toxicity female | No significant risk level (NSRL) | Maximum allowable dose level (MADL) |
|---|---|---|---|---|---|---|
| Vinyl chloride (75-01-4) | X | | | | 3 µg/day | |

| Component | State or local regulations |
|---|---|
| Tetrahydrofuran (109-99-9) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |
| Propionaldehyde (123-38-6) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| Methyl ethyl ketone (78-93-3) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| Cyclohexanone (108-94-1) | U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |
| Polyvinyl chloride (9002-86-2) | U.S. - New Jersey - Right to Know Hazardous Substance List |
| Vinyl chloride (75-01-4) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |

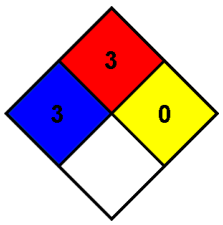
## SECTION 16: Other information

Other information : Author: WJS.

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.




HMIS Hazard Rating

Health : 3*

Health * - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 3

Physical : 0

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*