

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Trade name : Debind Fluid

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Binder removal from Desktop Metal Studio System 3D printed parts

#### 1.3. Supplier

Desktop Metal  
63 3rd Avenue  
Burlington, MA 01803  
T 978-224-1244  
[www.desktopmetal.com](http://www.desktopmetal.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC Day or Night 800-424-9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Acute toxicity (oral) Category 4 H302 Harmful if swallowed  
Acute toxicity (inhalation: dust, mist) Category 4 H332 Harmful if inhaled

Full text of H statements: see section 16

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

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H302+H332 - Harmful if swallowed or if inhaled  
Precautionary statements (GHS-US) : P261 - Avoid breathing mist, vapors.  
P264 - Wash hands thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P301+P312 - If swallowed: Call a POISON CENTER, a doctor if you feel unwell  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER, a doctor if you feel unwell  
P330 - Rinse mouth.  
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	%	GHS-US classification
trans-1,2-Dichloroethylene	(CAS-No.) 156-60-5	90 - 98	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332

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Name	Product identifier	%	GHS-US classification
Proprietary B	(CAS-No.) Proprietary	1 - 5	Not classified
Proprietary A	(CAS-No.) Proprietary	1 - 5	Not classified

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements: see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Allow victim to breathe fresh air. Allow the victim to rest. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Get medical advice if skin irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell. Give water to drink if victim completely conscious/alert.

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

Potential Adverse human health effects and symptoms	: Harmful if swallowed. Harmful if inhaled.
Symptoms/effects after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.

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

Treat symptomatically.

### SECTION 5: Fire-fighting measures

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

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

#### 5.2. Specific hazards arising from the chemical

Fire hazard	: The product is not flammable. Under fire conditions closed containers may rupture or explode.
Reactivity	: Stable under normal conditions of use.

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

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Positive pressure self-contained breathing apparatus (SCBA).
Other information	: Thermal decomposition generates: carbon oxides (CO and CO <sub>2</sub> ). Incineration may cause the following products: Toxic gases and vapors may be released in a fire. Halogenated compounds. Hydrogen fluoride. Hydrogen chloride.

### SECTION 6: Accidental release measures

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

General measures	: Eliminate all ignition sources if safe to do so. Provide adequate ventilation to minimize dust and/or vapor concentrations. Avoid inhalation of vapors.
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##### 6.1.1. For non-emergency personnel

Protective equipment	: Use personal protective equipment as required. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection. In case of inadequate ventilation wear respiratory protection.
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Emergency procedures : Ventilate area. vapors are heavier than air and may spread along floors.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Collect all waste in suitable and labeled containers and dispose according to local legislation.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For disposal of residues refer to section 13: "Disposal considerations".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin, eyes and clothing. Use only outdoors or in a well-ventilated area. Avoid breathing mist, vapors. Keep away from open flames, hot surfaces and sources of ignition. Proper grounding procedures to avoid static electricity should be followed.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. 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

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Incompatible materials. Keep container tightly closed. Keep away from combustible material. Keep away from ignition sources (including static discharges).

Incompatible materials : Alkali metals. Alkaline earth metals. Combustible materials.

Storage temperature : < 46.8 °C

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

trans-1,2-Dichloroethylene (156-60-5)		
ACGIH	ACGIH TWA (ppm)	200 ppm
Proprietary B		
Not applicable		
Proprietary A		
ACGIH	SUP TWA (ppm)	200 ppm

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide proper grounding. Use only non-sparking tools.

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

#### Hand protection:

Wear suitable gloves resistant to chemical penetration

#### Eye protection:

Chemical goggles or safety glasses. Use splash goggles when eye contact due to splashing is possible

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In confined space use self-contained breathing apparatus

#### Other information:

Do not eat, drink or smoke during use.

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### SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Appearance	: Clear.
Color	: Water-white
Odor	: slightly ethereal
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: ≈ 46.8 °C
Flash point	: The product is not flammable. Tag Closed Cup (ASTM D 56)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable. Non flammable. Liquid.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Slightly soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: 372 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Lower Explosive Limit: 7 vol % Upper Explosive Limit: 15.6 vol %
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

Stable under normal conditions of use.

#### 10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid static electricity discharges.

#### 10.5. Incompatible materials

Alkali metals. Alkaline earth metals. Combustible materials.

#### 10.6. Hazardous decomposition products

Thermal decomposition generates : Incineration may cause the following products: Carbon monoxide. Carbon dioxide. Toxic vapors may be released. Halogenated compounds. hydrogen fluoride. Hydrogen chloride.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Harmful if inhaled.

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<b>trans-1,2-Dichloroethylene (156-60-5)</b>	
LD50 oral rat	1235 mg/kg
LD50 dermal rabbit	5000 mg/kg
LC50 inhalation rat (ppm)	24100 ppm/4h

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – single exposure	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Likely routes of exposure	: Ingestion. Inhalation. Skin and eye contact.
Potential Adverse human health effects and symptoms	: Harmful if swallowed. Harmful if inhaled.
Symptoms/effects after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.

<b>trans-1,2-Dichloroethylene (156-60-5)</b>	
LC50 fish 1	135 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

#### 12.2. Persistence and degradability

<b>Debind Fluid</b>	
Persistence and degradability	Not established.

#### 12.3. Bioaccumulative potential

<b>Debind Fluid</b>	
Bioaccumulative potential	Not established.

<b>trans-1,2-Dichloroethylene (156-60-5)</b>	
Log Pow	1.48

#### 12.4. Mobility in soil

<b>Debind Fluid</b>	
Mobility in soil	The product contains volatile substances which may spread in the atmosphere.

#### 12.5. Other adverse effects

Other information : Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
 Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

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### Transportation of Dangerous Goods

Not regulated

### Transport by sea

Not regulated

### Air transport

Not regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

trans-1,2-Dichloroethylene (156-60-5)	
CERCLA RQ	1000 lb listed under 1,2-Dichloroethylene

### 15.2. International regulations

#### CANADA

trans-1,2-Dichloroethylene (156-60-5)	
Listed on the Canadian DSL (Domestic Substances List)	
Cyclopentane, 1,1,2,2,3,3,4-heptafluoro- (15290-77-4)	
Listed on the Canadian NDSL (Non-Domestic Substances List)	

#### EU-Regulations

trans-1,2-Dichloroethylene (156-60-5)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Cyclopentane, 1,1,2,2,3,3,4-heptafluoro- (15290-77-4)	
Listed on ELINCS (European List of Notified Chemical Substances)	

#### National regulations

trans-1,2-Dichloroethylene (156-60-5)	
Listed on the AICS (Australian Inventory of Chemical Substances)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)	
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory	
Listed on the Japanese ISHL (Industrial Safety and Health Law)	
Listed on the Korean ECL (Existing Chemicals List)	
Listed on NZIoC (New Zealand Inventory of Chemicals)	
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)	
Japanese Pollutant Release and Transfer Register Law (PRTR Law)	
Listed on INSQ (Mexican National Inventory of Chemical Substances)	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
Cyclopentane, 1,1,2,2,3,3,4-heptafluoro- (15290-77-4)	
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory	
Listed on the Japanese ISHL (Industrial Safety and Health Law)	
Listed on NZIoC (New Zealand Inventory of Chemicals)	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 21 January 2020  
 Other information : None.

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Full text of H-phrases:

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H332	Harmful if inhaled

SDS US (GHS HazCom 2012) Prop 65 Correction

*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*