



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : FD Solvent
Synonyms : Product Code : 20576, 20582, 20747, 20748
Material uses : Industrial applications: Use for cleaning the Marsh printer and printer components only.
Emergency phone : Medical: CALL RMPDC, USA (303) 623-5716
 Transporters: CHEMTREC, USA (800)-424-9300
Supplier : Martek Industries Ltd
 Unit 12b, Ridings Park Ind. Estate
 Eastern Way, Cannock, Staffs WS11 7FJ. UK
 Tel: +44(0)1543 502202 Fax: +44(0)1543-467726

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation : Preparation

Information on Hazardous Ingredients

CAS No.	Percent (%)	Chemical name	R-Phrases
1) 78-93-3	90 - 100	2-Butanone	Xi R11, 36, 66, 67

* Occupational Exposure Limit(s), if available, are listed in Section 8

3. HAZARDS IDENTIFICATION

Classification : Highly flammable, Irritant

Risk phrases : R11- Highly flammable.
 R36- Irritating to eyes.
 R66- Repeated exposure may cause skin dryness or cracking.
 R67- Vapours may cause drowsiness and dizziness.

Safety phrases : None.

Effects and symptoms

Chemical name	Effects and symptoms
1) 2-Butanone	Irritating to eyes and respiratory system. Defatting to the skin. Harmful by inhalation, in contact with skin and if swallowed. Can cause dizziness, lightheadedness, headache, nausea and blurred vision. Can cause CNS depression.

4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Skin contact : Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Obtain medical attention.

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : Flammable liquid, soluble or dispersed in water.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water et in order to prevent pressure build-up, autoignition or explosion
- Special fire-fighting procedures** : Fire fighters should wear self-contained positive pressure breathing apparatus (SCBA) and full turnout gear.
- Hazardous thermal decomposition products** : These products are carbon oxides (CO, CO₂).
- Protection of fire-fighters** : Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Environmental precautions and cleanup methods** : Flammable liquid.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with dry earth, sand or other noncombustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed.

7. HANDLING AND STORAGE

- Handling** : Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
- Packaging materials** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are close to the workstation location.
- Hygiene measures** : Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Occupational Exposure Limits

<u>Chemical name</u>	<u>Exposure limits</u>
1) 2-Butanone	1) Austria AUVA MAK 8 hours 200 ppm 2) Belgium STEL 15 minutes 300 ppm 3) Belgium TWA 8 hours 200 ppm 4) Switzerland SUVA STEL 15 minutes 400 ppm 5) Switzerland SUVA TWA 8 hours 200 ppm 6) Germany BAUA TRGS TWA 8 hours 200 ppm (Skin) 7) Denmark DK-Arbejdstilsynet TWA 8 hours 50 ppm (Skin) 8) Spain STEL 15 minutes 300 ppm 9) Spain TWA 8 hours 200 ppm 10) European Union 2000/39/EC TWA 8 hours 200 ppm 11) European Union 2000/39/EC STEL 15 minutes 300 ppm 12) Finland Työterveyslaitos STEL 15 minutes 100 ppm 13) France INRS TWA (VME) 8 hours 200 ppm 14) Ireland STEL 15 minutes 300 ppm (Skin) 15) Ireland TWA 8 hours 200 ppm (Skin) 16) Italy STEL 15 minutes 300 ppm 17) Italy TWA 8 hours 200 ppm 18) Netherlands Arbeidsinspectie MAC TWA (TGG) 8 hours 200 ppm (Skin) 19) Norway N-Arbejdstilsynet TLV 8 hours 75 ppm 20) Sweden AFS KTV 15 minutes 100 ppm 21) Sweden AFS NGV 8 hours 50 ppm

Personal Protective Equipment

- Respiratory system** : Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Skin and body** : Lab coat.
- Hands** : Impervious gloves.
- Eyes** : Splash goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance	: Liquid.
Colour	: Colourless to light yellow.
Odour threshold	: The highest known value is 10 ppm. Weighted average: 9 ppm.
Boiling point	: The lowest known value is 80 °C. Weighted average: 79 °C.
Melting point	: May start to solidify at -87 °C. Weighted average: -87 °C.
Specific gravity	: 0.8 (Water = 1)
Vapour density	: 2.5 (Air = 1)
Vapor pressure	: The highest known value is 71 mmHg at 20°C. Weighted average: 71 mmHg at 20°C.
Evaporation rate (butyl acetate = 1)	: The highest known value is 7.1. Weighted average: 7.1.
Solubility	: Easily soluble in methanol, diethyl ether, n-octanol, acetone. Soluble in cold water, hot water.
Octanol/water partition coefficient	: The product is more soluble in oil.
Flash point	: -9 °C.
Autoignition temperature	: The lowest known value is 515 °C. Weighted average: 515 °C.
Flammable limits	: The lowest known value is 2.0%. The highest known value is 10.0%.
Volatility (w/w)	: 99 %.
VOC Volatility (w/w)	: 99 %.

10. STABILITY AND REACTIVITY

Stability	: The product is stable.
Conditions and materials to avoid	: Not available.
Hazardous reactions	: Slightly reactive with oxidizing agents, reducing agents, acids, alkalis.
Hazardous decomposition products	: These products are carbon oxides (CO, CO ₂).

11. TOXICOLOGICAL INFORMATION

<u>Chemical name</u>	<u>Toxicological Information</u>
1) 2-Butanone	1) LD50 Oral Rat: 2737 mg/kg 2) LD50 Oral Mouse: 2190 mg/kg 3) LD50 Oral Mouse: 4050 mg/kg 4) LD50 Dermal Rabbit: 6480 mg/kg 5) LC50 Inhalation vapour Rat: 23500 mg/m ³ 8 hours 6) LCLo Inhalation vapour Female Rat Foetotoxicity and developmental abnormalities (homeostasis) in rats.: 1000 ppm 1 hours

12. ECOLOGICAL INFORMATION

Persistence/degradability	: Not available.
Ecotoxicity	: Not available.
Germany water class (WGK)	: Wassergefährdungsklasse = 1

13. DISPOSAL CONSIDERATIONS

Disposal methods	: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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14. TRANSPORT INFORMATION

UN number	: UN1993
Proper shipping name	: Flammable liquid, n.o.s. (2-Butanone, Propan-2-ol)
ADR/RID class	: 3
ADR/RID item number	: Not available.
Packing group	: II

15. REGULATORY INFORMATION



Risk phrases : R11- Highly flammable.
R36- Irritating to eyes.
R66- Repeated exposure may cause skin dryness or cracking.
R67- Vapours may cause drowsiness and dizziness.

Safety phrases : None.

Other EU Regulations

Child protection : Not applicable.

Tactile warning of danger : Not applicable.

National Regulations

Not available.

16. OTHER INFORMATION

Date of issue : May 28, 2002

Prepared by : Garth Studebaker, CSP

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