

## Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: October 14, 2019

### 1 Identification

- **Product identifier**
- **Trade name: FeDOX**
- **Product code:** 23630, 23730, 23830
- **Recommended use and restriction on use**
- **Recommended use:** Metal surface treatment
- **Restrictions on use:** Contact manufacturer/supplier
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
FERTAN LLC  
12485 S West 137th Avenue, Suite 212  
Miami, FL 33186  
USA  
(305) 614-1140
- **contact@fertanusa.com**  
**http://www.fertanusa.com**
- **Emergency telephone number:** XXX

### 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Met. Corr.1 H290 May be corrosive to metals.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Dam. 1 H318 Causes serious eye damage.
- **Additional information:**  
There are no other hazards not otherwise classified that have been identified.  
0 % of the mixture consists of component(s) of unknown toxicity.

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- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS05

- **Signal word:** Danger
- **Hazard statements:**  
H290 May be corrosive to metals.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.
- **Precautionary statements:**  
P234 Keep only in original container.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves and eye protection.  
P302+P352 If on skin: Wash with plenty of water.

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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant container with a resistant inner liner.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Components:**

77-92-9	Citric acid ⚠ Eye Irrit. 2A, H319	10-30%
79-14-1	glycolic acid ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318 ⚠ Acute Tox. 4, H332	1-5%
7664-38-2	Phosphoric acid ⚠ Met. Corr. 1, H290; Skin Corr. 1B, H314; Eye Dam. 1, H318	1-5%
174955-61-4	oxirane, 2-methyl, polymer with oxirane, mono[2-(6,6-dimethylbicyclo[3,1,1]hept-2-en-2-yl)ethyl]ether ⚠ Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302	1-5%

· **Additional information:**

For the wording of the listed Hazard Statements, refer to section 16.

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

### 4 First-aid measures

· **Description of first aid measures**· **General information:** No special measures required.· **After inhalation:** Supply fresh air; consult doctor in case of complaints.· **After skin contact:**

Immediately rinse with water.

If skin irritation continues, consult a doctor.

Seek immediate help for blistering or open wounds.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· **Most important symptoms and effects, both acute and delayed:**

Strong irritant with the danger of severe eye injury.

Caustic effect on skin and mucous membranes.

Gastric or intestinal disorders when ingested.

· **Danger:**

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Causes serious eye damage.

Danger of gastric perforation.

**· Indication of any immediate medical attention and special treatment needed:**

Medical supervision for at least 48 hours.

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### 5 Fire-fighting measures

**· Extinguishing media****· Suitable extinguishing agents:** Use fire fighting measures that suit the environment.**· For safety reasons unsuitable extinguishing agents:** None.**· Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

**· Advice for firefighters****· Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

**· Additional information:** No relevant information available.

### 6 Accidental release measures

**· Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

Ensure adequate ventilation.

Particular danger of slipping on leaked/spilled product.

**· Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**· Methods and material for containment and cleaning up**

Use limestone to neutralize and/or absorb spill.

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

**· Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

**· Handling****· Precautions for safe handling:**

The usual precautionary measures for handling chemicals should be followed.

Avoid contact with the eyes and skin.

Prevent formation of aerosols.

Avoid splashes or spray in enclosed areas.

Use only in well ventilated areas.

**· Information about protection against explosions and fires:** No special measures required.

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- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**  
 Store only in the original receptacle.  
 Provide ventilation for receptacles.  
 Unsuitable material for receptacle: aluminium.  
 Unsuitable material for receptacle: steel.
- **Information about storage in one common storage facility:**  
 Store away from foodstuffs.  
 Store away from metals.  
 Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:** None.
- **Specific end use(s)** No relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**7664-38-2 Phosphoric acid**

PEL (USA)	Long-term value: 1 mg/m <sup>3</sup>
REL (USA)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>
TLV (USA)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>
EL (Canada)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>
EV (Canada)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>
LMPE (Mexico)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup>

- **Exposure controls**
- **General protective and hygienic measures:**  
 The usual precautionary measures for handling chemicals should be followed.  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:**  
 Not required under normal conditions of use.  
 For spills, respiratory protection may be advisable.  
 Use suitable respiratory protective device when aerosol or mist is formed.
- **Protection of hands:**



Protective gloves

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- **Material of gloves**  
Chloroprene rubber, CR  
Natural rubber, NR  
Sensibilization by the components in the glove materials is possible.
- **Eye protection:**  
Contact lenses should not be worn.



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**  
No relevant information available.
- **Risk management measures**  
See Section 7 for additional information.  
No relevant information available.

### 9 Physical and chemical properties

#### · Information on basic physical and chemical properties

##### · Appearance:

- |                          |                 |
|--------------------------|-----------------|
| · <b>Form:</b>           | Liquid          |
| · <b>Color:</b>          | Yellow tint     |
| · <b>Odor:</b>           | Characteristic  |
| · <b>Odor threshold:</b> | Not determined. |

- |  |                           |
|--|---------------------------|
| · <b>pH-value (1132 g/l) at 20 °C (68 °F):</b> | <1 (2.4 - 1% solution)    |
| · <b>Melting point/Melting range:</b>          | Not determined.           |
| · <b>Boiling point/Boiling range:</b>          | 100 - 105 °C (212-221 °F) |

- |                       |                   |
|-----------------------|-------------------|
| · <b>Flash point:</b> | >100 °C (>212 °F) |
|-----------------------|-------------------|

- |   |                 |
|---|-----------------|
| · <b>Flammability (solid, gaseous):</b> | Not applicable. |
|---|-----------------|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Auto-ignition temperature:</b> | Not applicable. |
|-------------------------------------|-----------------|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Decomposition temperature:</b> | Not determined. |
|-------------------------------------|-----------------|

- |                               |   |
|-------------------------------|---|
| · <b>Danger of explosion:</b> | Product does not present an explosion hazard. |
|-------------------------------|---|

##### · Explosion limits

- |                 |                 |
|-----------------|-----------------|
| · <b>Lower:</b> | Not determined. |
| · <b>Upper:</b> | Not determined. |

- |                                |                 |
|--------------------------------|-----------------|
| · <b>Oxidizing properties:</b> | Not determined. |
|--------------------------------|-----------------|

- |   |                     |
|---|---------------------|
| · <b>Vapor pressure at 20 °C (68 °F):</b> | 23 hPa (17.3 mm Hg) |
|---|---------------------|

- |                                    |   |
|------------------------------------|---|
| · <b>Density at 20 °C (68 °F):</b> | 1.165 - 1.175 g/cm <sup>3</sup> (9.72-9.81 lbs/gal) |
| · <b>Relative density:</b>         | Not determined.                                     |
| · <b>Vapor density:</b>            | Not determined.                                     |
| · <b>Evaporation rate:</b>         | Not determined.                                     |

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- **Solubility in / Miscibility with Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
- **Other information** No relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Reacts with alkali (lyes).  
Reacts with certain metals.  
Toxic fumes may be released if heated above the decomposition point.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials**  
Oxidizers  
Alkalis.  
Metals.
- **Hazardous decomposition products**  
Under fire conditions only:  
Carbon monoxide and carbon dioxide  
Phosphorus oxides (e.g. P<sub>2</sub>O<sub>5</sub>)

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	>5,000 mg/kg
Inhalative	LC50/4h	30 mg/l

**79-14-1 glycolic acid**

Oral	LD50	2,040 mg/kg (rat)
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- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.

- **IARC (International Agency for Research on Cancer):**

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None of the ingredients are listed.

**· NTP (National Toxicology Program):**

None of the ingredients are listed.

**· OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

**· Probable route(s) of exposure:**

Ingestion.

Inhalation.

Eye contact.

Skin contact.

**· Acute effects (acute toxicity, irritation and corrosivity):**

Causes serious eye damage.

Irritating to skin.

May be harmful if inhaled.

**· Repeated dose toxicity:** No relevant information available.**· Germ cell mutagenicity:** Based on available data, the classification criteria are not met.**· Carcinogenicity:** Based on available data, the classification criteria are not met.**· Reproductive toxicity:** Based on available data, the classification criteria are not met.**· STOT-single exposure:** Based on available data, the classification criteria are not met.**· STOT-repeated exposure:** Based on available data, the classification criteria are not met.**· Aspiration hazard:** Based on available data, the classification criteria are not met.

### 12 Ecological information

**· Toxicity****· Aquatic toxicity****68439-51-0 alcohols, C12-14, ethoxylated, propoxylated**

LC50 &gt;1-&lt;10 mg/l (Leuciscus idus melanotus)

EC50 &gt;1-&lt;10 mg/l (daphnia)

**· Persistence and degradability** Easily biodegradable**· Bioaccumulative potential:** Does not accumulate in organisms**· Mobility in soil:** No relevant information available.**· Additional ecological information****· General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. If the dilution of the use-level pH-value is considerably increased after use, the aqueous waste, emptied into drains, is only low water-dangerous.

**· Other adverse effects** No relevant information available.

### 13 Disposal considerations

**· Waste treatment methods****· Recommendation:**

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Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

Dilute concentrate with water and neutralize afterwards with suitable material (lime or chalk). The formed salts are inert and pose little hazard.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
- **DOT, ADR/RID/ADN, IMDG, IATA** UN1760

- **UN proper shipping name**



Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 5 L (1.3 gal).

- **DOT** Corrosive liquids, n.o.s. (Phosphoric acid solution, glycollic acid)
- **ADR/RID/ADN** 1760 CORROSIVE LIQUID, N.O.S. (PHOSPHORIC ACID, SOLUTION, GLYCOLLIC ACID)
- **IMDG, IATA** CORROSIVE LIQUID, N.O.S. (PHOSPHORIC ACID, SOLUTION, GLYCOLLIC ACID)

- **Transport hazard class(es)**

- **DOT**



- **Class** 8
- **Label** 8

- **ADR/RID/ADN**



- **Class** 8 (C9)
- **Label** 8

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<ul style="list-style-type: none"> <li>· <b>IMDG, IATA</b></li> </ul>	
	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p>8</p> <p>8</p>
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR/RID/ADN, IMDG, IATA</b></li> </ul>	<p>III</p>
<ul style="list-style-type: none"> <li>· <b>Environmental hazards</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	<p>No</p>
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Segregation groups</b></li> </ul>	<p>Warning: Corrosive substances</p> <p>80</p> <p>F-A,S-B</p> <p>Acids</p>
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	<p>Not applicable.</p>

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

7664-38-2 | Phosphoric acid

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed or exempt.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

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None of the ingredients are listed.

**· EPA (Environmental Protection Agency):**

None of the ingredients are listed.

**· IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

**· Canadian Domestic Substances List (DSL):**

All ingredients listed on DSL or NDSL.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety &amp; Health Administration

Met. Corr. 1: Corrosive to metals – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

**· Sources**

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