

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 01/08/2016

Revision: 01/08/2016

1 Identification

- **Product identifier**
- **Trade name:** X-RESTORE OXIDIZED METAL Part B
- **Other means of identification:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Catalyst
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
xGen, LLC
118 Rochester Drive
Louisville, KY 40214
Phone: (502) 992-0670
- **Emergency telephone number:**
ChemTel Inc.
+1 (800)255-3924, +1 (813)248-0585

2 Hazard(s) identification

- **Classification of the substance or mixture**
Flam. Liq. 4 H227 Combustible liquid.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:**



GHS07

- **Signal word:** Warning
- **Hazard-determining components of labeling:**
2-butoxyethanol
- **Hazard statements:**
H227 Combustible liquid.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
- **Precautionary statements:**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection.

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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.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Dangerous components:**

| | | |
|----------|---|--------|
| 111-76-2 | 2-butoxyethanol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319 Flam. Liq. 4, H227 | 25-50% |
| 64-19-7 | acetic acid ⚠ Flam. Liq. 3, H226 ⚠ Skin Corr. 1A, H314 | <1.0% |

· **Additional information:**

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

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

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

· **After inhalation:**

Supply fresh air; consult doctor in case of complaints.

Provide oxygen treatment if affected person has difficulty breathing.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After skin contact:**

Immediately remove any clothing soiled by the product.

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

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Do not induce vomiting; immediately call for medical help.

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

Headache
Breathing difficulty
Dizziness
Coughing
Irritant to skin and mucous membranes.
Irritant to eyes.
Acidosis
Gastric or intestinal disorders when ingested.
Nausea in case of ingestion.
Disorientation

· **Danger:**

Harmful in contact with skin.
Danger of impaired breathing.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

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

If necessary oxygen respiration treatment.
Medical supervision for at least 48 hours.

5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **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.
Can form explosive gas-air mixtures.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.
Wear fully protective suit.

· **Additional information:**

Eliminate all ignition sources if safe to do so.
Use large quantities of foam as it is partially destroyed by the product.
Cool endangered receptacles with water spray.

6 Accidental release measures

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

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources.
Ensure adequate ventilation.

· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

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- **Methods and material for containment and cleaning up:**
Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
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:**
Prevent formation of aerosols.
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Flammable gas-air mixtures may be formed in empty containers/receptacles.
The product forms flammable fumes when heated.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Provide ventilation for receptacles.
Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Keep containers tightly sealed.
- **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:**

111-76-2 2-butoxyethanol

| | |
|-----------|---|
| PEL (USA) | Long-term value: 240 mg/m ³ , 50 ppm Skin |
| REL (USA) | Long-term value: 24 mg/m ³ , 5 ppm Skin |
| TLV (USA) | Long-term value: 97 mg/m ³ , 20 ppm BEI |

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| | |
|---------------|------------------------------------|
| EL (Canada) | Long-term value: 20 ppm |
| EV (Canada) | Long-term value: 20 ppm Skin |
| LMPE (Mexico) | Long-term value: 20 ppm A3, IBE |

64-19-7 acetic acid

| | |
|---------------|---|
| PEL (USA) | Long-term value: 25 mg/m ³ , 10 ppm |
| REL (USA) | Short-term value: 37 mg/m ³ , 15 ppm Long-term value: 25 mg/m ³ , 10 ppm |
| TLV (USA) | Short-term value: 37 mg/m ³ , 15 ppm Long-term value: 25 mg/m ³ , 10 ppm |
| EL (Canada) | Short-term value: 15 ppm Long-term value: 10 ppm |
| EV (Canada) | Short-term value: 37 mg/m ³ , 15 ppm Long-term value: 25 mg/m ³ , 10 ppm |
| LMPE (Mexico) | Short-term value: 15 ppm Long-term value: 10 ppm |

- **Ingredients with biological limit values:**

111-76-2 2-butoxyethanol

| | |
|-----------|--|
| BEI (USA) | 200 mg/g creatinine Medium: urine Time: end of shift Parameter: Butoxyacetic acid with hydrolysis |
|-----------|--|

- **Exposure controls**

- **Personal protective equipment:**

- **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.
 Do not inhale gases / fumes / aerosols.

- **Engineering controls:** No relevant information available.

- **Breathing equipment:**

Not required under normal conditions of use.
 Use suitable respiratory protective device when high concentrations are present.
 Use suitable respiratory protective device when aerosol or mist is formed.
 For spills, respiratory protection may be advisable.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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· Eye protection:



Safety glasses

· Body protection: Solvent resistant protective clothing

· Limitation and supervision of exposure into the environment

No relevant information available.

· Risk management measures See Section 7 for additional information.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· Appearance:

| | |
|-----------------|-----------------|
| Form: | Liquid |
| Color: | Colorless |
| Odor: | Characteristic |
| Odor threshold: | Not determined. |

· pH-value: 3-4

· Melting point/Melting range: Not determined.

· Boiling point/Boiling range: Not determined.

· Flash point: >66 °C (>151 °F)

· Flammability (solid, gaseous): Not applicable.

· Auto-ignition temperature: Not determined.

· Decomposition temperature: Not determined.

· Auto igniting: Product is not self-igniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits

| | |
|--------|-----------------|
| Lower: | Not determined. |
| Upper: | Not determined. |

· Vapor pressure: Not determined.

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Fully miscible.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity

Dynamic: Not determined.

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| | |
|--------------------------|------------------------------------|
| 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:** Keep away from heat and direct sunlight.
- **Possibility of hazardous reactions:**
 Strong exothermic reaction with acids.
 Reacts with acids, alkalis and oxidizing agents.
 Toxic fumes may be released if heated above the decomposition point.
 Combustible liquid.
- **Conditions to avoid:**
 Avoid acids.
 Store away from oxidizing agents.
 Keep ignition sources away - Do not smoke.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

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

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

111-76-2 2-butoxyethanol

| | | |
|--------|------|------------------|
| Oral | LD50 | 1480 mg/kg (rat) |
| Dermal | LD50 | 400 mg/kg (rab) |

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Carcinogenic categories**

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

| | | |
|----------|-----------------|---|
| 111-76-2 | 2-butoxyethanol | 3 |
|----------|-----------------|---|

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

None of the ingredients are listed.

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

None of the ingredients are listed.

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

May be harmful if swallowed.
 May be harmful if inhaled.

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Harmful in contact with skin.

Vapors have narcotic effect.

- **Repeated dose toxicity:** Repeated exposure may cause skin dryness or cracking.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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** No relevant information available.

- **Persistence and degradability** Biodegradable.

- **Behavior in environmental systems**

- **Bioaccumulative potential:** No relevant information available.

- **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.

Due to available data on eliminability/decomposition and bioaccumulation potential, a prolonged damage of the environment is unlikely.

- **Other adverse effects:** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Contact waste processors for recycling information.

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

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.

- **Uncleaned packagings**

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

14 Transport information

- **UN-Number**

- **DOT**

Not regulated.

Classified as combustible under US DOT regulations.

Labeling is only required for single packages ≥ 119 US

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| | |
|--|--------------------------------|
| · ADR, IMDG, IATA | gal / 450 L. Not regulated. |
| · UN proper shipping name · DOT, ADR, IMDG, IATA | Not regulated. |
| · Transport hazard class(es) · DOT, ADR, IMDG, IATA · Class | Not regulated. |
| · Packing group · DOT, ADR, IMDG, IATA | Not regulated. |
| · Environmental hazards · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

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 304 (emergency release notification):

None of the ingredients are listed.

· Sections 311/312 (hazardous chemical threshold planning quantity in pounds):

None of the ingredients are listed.

· Section 355 (extremely hazardous substances):

None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):

111-76-2 | 2-butoxyethanol

· TSCA (Toxic Substances Control Act)

All ingredients are listed.

· Proposition 65 (California)

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

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· Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

· Carcinogenic categories
· EPA (Environmental Protection Agency):

111-76-2 | 2-butoxyethanol

NL

· IARC (International Agency for Research on Cancer):

111-76-2 | 2-butoxyethanol

3

· NIOSH-Ca (National Institute for Occupational Safety and Health):

None of the ingredients are listed.

· Canadian substance listings
· Canadian Domestic Substances List (DSL):

All ingredients are listed.

· Canadian Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

· Canadian Ingredient Disclosure list (limit 1%):

111-76-2 | 2-butoxyethanol

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.

· Date of preparation / last revision 01/08/2016 / -
· 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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Flam. Liq. 4: Flammable liquids, Hazard Category 4

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

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

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SourcesWebsite, European Chemicals Agency (echa.europa.eu)Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do)Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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