SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ZEP FORMULA 50 4-1GL
Material number : 000000000000085924

Manufacturer or supplier’s details
Company : Zep Inc.
Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137
Telephone : 404-352-1680

Emergency telephone numbers
For SDS Information : Compliance Services 1-877-428-9937
For a Medical Emergency : 877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency : CHEMTREC: 800-424-9300 - All Calls Recorded.
In the District of Columbia 202-483-7616

Recommended use of the chemical and restrictions on use
Recommended use : Specialty Cleaner and Remover

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

| Appearance | liquid |
| Colour | clear, dark blue |
| Odour | mild |

GHS Classification
Skin corrosion : Category 1
Serious eye damage : Category 1
Specific target organ toxicity - repeated exposure (Inhalation) : Category 2

GHS label elements
Hazard pictograms :

Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements : Prevention:
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
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P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P314 Get medical advice/ attention if you feel unwell.
P363 Wash contaminated clothing before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
<td>&gt;= 3 - &lt; 5</td>
</tr>
<tr>
<td>Sodium metasilicate (disodium salt)</td>
<td>6834-92-0</td>
<td>&gt;= 3 - &lt; 5</td>
</tr>
<tr>
<td>Silicic acid, sodium salt</td>
<td>1344-09-8</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
<tr>
<td>Tetratosodium ethylenediaminietraacetate</td>
<td>64-02-8</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-16-alkyl derivs.</td>
<td>68584-22-5</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
</tbody>
</table>

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

General advice: Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled: Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact: Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Wash off immediately with plenty of water for at least 15 minutes.
If on clothes, remove clothes.

In case of eye contact:
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Rinse immediately with plenty of water for at least 15 minutes.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed:
Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed:
Effects are immediate and delayed.
Symptoms may include blistering, irritation, burns, and pain.
Effects are dependent on exposure (dose, concentration, contact time).
Causes severe skin burns and eye damage.
May cause damage to organs through prolonged or repeated exposure if inhaled.
Review section 2 of SDS to see all potential hazards.

Notes to physician:
Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media:
Dry chemical
Water
Foam
Carbon dioxide (CO2)

Unsuitable extinguishing media:
High volume water jet

Specific hazards during firefighting:
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products:
Carbon dioxide (CO2)
Carbon monoxide
Smoke
Nitrogen oxides (NOx)
Sulphur oxides

Specific extinguishing methods:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information:
Collect contaminated fire extinguishing water separately. This
must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

- Use personal protective equipment. Ensure adequate ventilation.

**Environmental precautions**

- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

**Methods and materials for containment and cleaning up**

- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
- Keep in suitable, closed containers for disposal.

**SECTION 7. HANDLING AND STORAGE**

**Advice on safe handling**

- Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
- Provide sufficient air exchange and/or exhaust in work rooms.
- To avoid spills during handling keep bottle on a metal tray.
- Dispose of rinse water in accordance with local and national regulations.

**Conditions for safe storage**

- Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**Materials to avoid**

- Oxidizing agents
- Do not freeze.
- Do not store near acids.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>
TWA 5 ppm 24 mg/m³ NIOSH REL
TWA 50 ppm 240 mg/m³ OSHA Z-1
TWA 25 ppm 120 mg/m³ OSHA P0
PEL 20 ppm 97 mg/m³ CAL PEL

### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-BUTOXYETHANOL</td>
<td>111-76-2</td>
<td>Butoxycetic acid (BAA)</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>200 mg/g Creatinine</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>

### Engineering measures

- effective ventilation in all processing areas

### Personal protective equipment

**Respiratory protection**
- Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

**Hand protection**
- Material: Protective gloves
- Remarks: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

**Eye protection**
- Eye wash bottle with pure water
- Tightly fitting safety goggles
- Wear face-shield and protective suit for abnormal processing problems.

**Skin and body protection**
- Impervious clothing
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**
- When using do not eat or drink.
- When using do not smoke.
- Wash hands before breaks and at the end of workday.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- liquid

**Colour**
- clear, dark blue

**Odour**
- mild
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Odour Threshold : No data available
pH : > 13
Melting point/freezing point : No data available
Boiling point : 104.44 °C
Flash point : does not flash
Evaporation rate : 1

Upper explosion limit : No data available
Lower explosion limit : No data available
Vapour pressure : not determined
Relative vapour density : No data available
Density : 1.058 g/cm³

Solubility(ies)
Water solubility : soluble
Partition coefficient: n-octanol/water : No data available
Auto-ignition temperature : not determined
Thermal decomposition : No data available

Viscosity
Viscosity, kinematic : 5.2 mm²/s (20 °C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No decomposition if stored and applied as directed.
Conditions to avoid : Extremes of temperature and direct sunlight.

No data available

Incompatible materials : Acids
Oxidizing agents

Hazardous decomposition products : Carbon oxides
Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION
Potential Health Effects

Aggravated Medical Condition: None known.
Symptoms of Overexposure: Effects are immediate and delayed. Symptoms may include blistering, irritation, burns, and pain. Effects are dependent on exposure (dose, concentration, contact time).

Carcinogenicity:
- **IARC**: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- **ACGIH**: Confirmed animal carcinogen with unknown relevance to humans
- **OSHA**: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.
- **NTP**: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Acute toxicity

**Product:**
- **Acute oral toxicity**: Acute toxicity estimate: > 5,000 mg/kg
  Method: Calculation method
- **Acute inhalation toxicity**: Acute toxicity estimate: > 200 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
  Method: Calculation method
- **Acute dermal toxicity**: Acute toxicity estimate: > 5,000 mg/kg
  Method: Calculation method

**Components:**
- **2-butoxyethanol**:
  - Acute oral toxicity: LD50 Oral Rat: 880 mg/kg
- **Acute dermal toxicity**: LD50 Dermal Rabbit: 1,060 mg/kg

**Sodium metasilicate (disodium salt)**:
- Acute oral toxicity: LD50 Rat: 1,153 mg/kg

Skin corrosion/irritation

**Product:**
Remarks: Extremely corrosive and destructive to tissue.
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Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

Components:

tetrasodium ethylenediaminetetraacetate:

Exposure routes: Inhalation

Assessment: May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water

Remarks: No data available
Mobility in soil
No data available

Other adverse effects
No data available

Product:

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances</td>
<td>This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).</td>
</tr>
</tbody>
</table>

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

| Waste from residues | Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Dispose of in accordance with local regulations. |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Contaminated packaging | Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.                                                                 |

SECTION 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Transportation Regulation: 49 CFR (USA):</th>
<th>NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Regulation: IMDG (Vessel):</td>
<td>NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL</td>
</tr>
<tr>
<td>Transportation Regulation: IATA (Cargo Air):</td>
<td>NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL</td>
</tr>
<tr>
<td>Transportation Regulation: IATA (Passenger Air):</td>
<td>NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL</td>
</tr>
<tr>
<td>Transportation Regulation: TDG (Canada):</td>
<td>NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL</td>
</tr>
</tbody>
</table>
The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list: No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:
- 2-butoxyethanol 111-76-2 3.9714 %
- The following components are subject to reporting levels established by SARA Title III, Section 313:
- 2-butoxyethanol 111-76-2 3.9593 %

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA: On TSCA Inventory
DSL: All components of this product are on the Canadian DSL
For information on the country notification status for other regions please contact the manufacturer’s regulatory group.

Inventory Acronym and Validity Area Legend:
TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

Further information

NFPA: Flammability

HMIS III:

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms:

Signal word: Danger
Hazard statements: Causes severe skin burns and eye damage. May cause damage to organs through prolonged or repeated exposure if inhaled.
Precautionary statements:
Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Get medical advice/ attention if you feel unwell. Wash contaminated clothing before reuse.
Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with local regulation.
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