

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ZEP STEAM BOILER COMPLETE TREATMENT

Material number : B21547C

#### Manufacturer or supplier's details

Company : Zep Inc.

Address : 11627 - 178 Street  
Edmonton, Alberta T5S 1N6  
Canada

Telephone : Compliance Services - 877-428-9937

#### Emergency telephone numbers

For SDS Information : Compliance Services - 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.

#### Recommended use of the chemical and restrictions on use

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

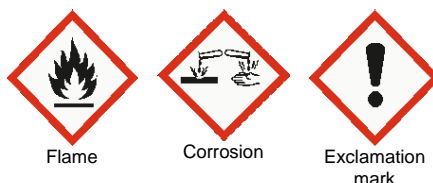
Appearance	liquid
Colour	colourless, amber
Odour	odourless

#### GHS Classification

Flammable liquids : Category 3  
Skin corrosion : Category 1  
Serious eye damage : Category 1  
Skin sensitisation : Category 1

#### GHS label elements

Hazard pictograms :



Signal word : Danger

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

Hazard statements : H226 Flammable liquid and vapour.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
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.  
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.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
**Storage:**  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/container in accordance with local regulation.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Hazardous components

Chemical name	CAS-No.	Concentration [%]
N,N-diethylhydroxylamine	3710-84-7	>= 5 - < 10
tetrapotassium pyrophosphate	7320-34-5	>= 5 - < 10
morpholine	110-91-8	>= 1 - < 5

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

potassium hydroxide	1310-58-3	$\geq 1 - < 5$
maleic acid	110-16-7	$\geq 0.1 - < 1$

### 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 : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If skin irritation persists, call a physician.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
Immediately flush eyes for at least 15 minutes. Get medical attention.  
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.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
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.  
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 : Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

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 (CO <sub>2</sub> ) Carbon monoxide Nitrogen oxides (NO <sub>x</sub> ) Smoke
Specific extinguishing methods	: Standard procedure for chemical fires.
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. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
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. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

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### SECTION 7. HANDLING AND STORAGE

Advice on safe handling	: Avoid formation of aerosol. Do not breathe vapours/dust. 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. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms.
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# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

Open drum carefully as content may be under pressure.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : No smoking.  
Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Do not freeze.  
Keep away from oxidizing agents and strongly acid or alkaline materials.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
N,N-diethylhydroxylamine	3710-84-7	TWA	2 ppm	ACGIH
morpholine	110-91-8	TWA	20 ppm 71 mg/m3	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	20 ppm 71 mg/m3	CA QC OEL
		TWA	20 ppm	ACGIH
potassium hydroxide	1310-58-3	(c)	2 mg/m3	CA AB OEL
		C	2 mg/m3	CA BC OEL
		C	2 mg/m3	CA QC OEL
		C	2 mg/m3	ACGIH

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  
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.

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

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.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, amber
Odour	: odourless
Odour Threshold	: No data available
pH	: 13.0 - 13.5
Melting point/freezing point	: No data available
Boiling point	: 100 °C
Flash point	: No data available
Evaporation rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Density	: 1.00 g/cm <sup>3</sup>
Solubility(ies)	
Water solubility	: completely soluble
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, kinematic	: No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable
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# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Vapours may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Acids Oxidizing agents
Hazardous decomposition products	: No decomposition if stored and applied as directed.

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### 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). Causes severe skin burns and eye damage. Review section 2 of SDS to see all potential hazards. Treat symptomatically. Symptoms may be delayed.

#### 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.

#### Acute toxicity

##### Product:

Acute oral toxicity	: Acute toxicity estimate : 3,966 mg/kg Method: Calculation method
Acute inhalation toxicity	: Acute toxicity estimate : > 40 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

#### Skin corrosion/irritation

##### Product:

Remarks: Extremely corrosive and destructive to tissue.

#### Serious eye damage/eye irritation

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

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### **Product:**

Remarks: May cause irreversible eye damage.

### **Respiratory or skin sensitisation**

#### **Product:**

Remarks: Causes sensitisation.

### **Components:**

#### **maleic acid:**

Classification: May cause sensitisation by skin contact.

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available

### **STOT - single exposure**

No data available

### **STOT - repeated exposure**

No data available

### **Aspiration toxicity**

No data available

### **Further information**

#### **Product:**

Remarks: Solvents may degrease the skin.

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## **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



# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

### Components:

#### **N,N-diethylhydroxylamine :**

Partition coefficient: n-octanol/water : log Pow: 0.43

#### **morpholine :**

Partition coefficient: n-octanol/water : Pow: 2.55

### **Mobility in soil**

No data available

### **Other adverse effects**

No data available

### Product:

Additional ecological information : No data available

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## 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.  
Do not burn, or use a cutting torch on, the empty drum.

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## SECTION 14. TRANSPORT INFORMATION

Transportation Regulation (TDG) / Règlement Pour Le Transport (TMD): (Canada): UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., (POTASSIUM HYDROXIDE), 8, II
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Transportation Regulation / Règlement Pour Le Transport: IMDG (Vessel): UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., (POTASSIUM HYDROXIDE), 8, II
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Transportation Regulation / Règlement Pour Le Transport: IATA (Cargo Air): UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II
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Transportation Regulation / Règlement Pour Le Transport: IATA (Passenger Air): UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II
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Transportation Regulation / Règlement Pour Le Transport: 49 CFR (USA): UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II
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The product as delivered to the customer conforms to packaging requirements for shipment by road under Transport Dangerous Goods (TDG) Canada regulations. Additional transportation classifications

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

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

This product has been classified according to the hazard criteria of the HPR and the SDS contains all of the information required by the HPR.

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

**TSCA**  
**DSL**

On TSCA Inventory  
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

#### WHMIS - GHS Label Information:

Hazard pictograms

:



Flame



Corrosion



Exclamation mark

Signal word

: **Danger:**

Hazard statements

: Flammable liquid and vapour. Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Precautionary statements

:

**Prevention:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:** Store in a well-ventilated place. Keep cool. Store locked up.

# SAFETY DATA SHEET

## ZEP STEAM BOILER COMPLETE TREATMENT

Version 1.1

Revision Date 10/01/2023

Print Date 04/27/2025

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

---

Version:	1.1
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