SECTION 1. IDENTIFICATION

Product name: TERWET® 1004

Manufacturer or supplier’s details
Company name of supplier: Huntsman International LLC
Address: P.O. Box 4980
The Woodlands,
TX  77387
United States of America (USA)
Telephone: TechInfo: (281) 719-7780
E-mail address of person responsible for the SDS: MSDS@huntsman.com
Emergency telephone number: Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use
Recommended use: Surfactant

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Skin irritation: Category 2
Serious eye damage: Category 1
Acute aquatic toxicity: Category 2

GHS label elements
Hazard pictograms:

Signal word: Danger
Hazard statements: H315 Causes skin irritation.
H318 Causes serious eye damage.
H401 Toxic to aquatic life.

Precautionary statements: Prevention:
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
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.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

Storage:
Not available

Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

<table>
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<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
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<tr>
<td>Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts</td>
<td>68439-57-6</td>
<td>90 - 100</td>
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</table>

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

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 : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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: None known.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 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: No hazardous combustion products are known
- Specific extinguishing methods: No data is available on the product itself.
- 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.
- Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing dust.
- 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: Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against: Avoid dust formation. Provide appropriate exhaust ventilation
fire and explosion at places where dust is formed.

Advice on safe handling:
- Avoid formation of respirable particles.
- Do not breathe vapours/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- 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.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection:
- General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn.
- Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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.

Skin and body protection:
- Dust impervious protective suit
- 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: powder

Colour: off-white

Odour: oily

Odour Threshold: No data is available on the product itself.

pH: 6 - 11

Freezing point: No data is available on the product itself.

Melting point: No data is available on the product itself.

Boiling point: No data is available on the product itself.

Flash point: Method: No information available.

Evaporation rate: No data is available on the product itself.

Flammability (solid, gas): No data is available on the product itself.

Flammability (liquids): No data is available on the product itself.

Upper explosion limit: No data is available on the product itself.

Lower explosion limit: No data is available on the product itself.

Vapour pressure: No data is available on the product itself.

Relative vapour density: No data is available on the product itself.

Relative density: 0.3 - 0.4

Density: 0.4 g/cm³ (23 °C)

 Bulk density

Solubility(ies)

Water solubility: 292 g/l soluble (20 °C)

 Solvent: Water solubility

Solubility in other solvents: Solvent: Methanol

 Description: partly soluble

Partition coefficient: n-octanol/water: No data is available on the product itself.

Auto-ignition temperature: No data is available on the product itself.

Thermal decomposition: No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity : No data is available on the product itself.

Explosive properties : No data is available on the product itself.


Particle size : No data is available on the product itself.

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Dust may form explosive mixture in air.

Conditions to avoid : None known.

Incompatible materials : None known.

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**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : No data is available on the product itself.

**Acute toxicity**

Acute oral toxicity - Product : Acute toxicity estimate : 2,260 mg/kg

Method: Calculation method

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:

Acute inhalation toxicity : LC50 (Rat): > 52 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:

Acute dermal toxicity : LD50 (Rabbit): 6,300 - 13,500 mg/kg

Method: OECD Test Guideline 402

Acute toxicity (other routes of administration) : No data available
Skin corrosion/irritation

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

Serious eye damage/eye irritation

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Species: Rabbit
Result: Risk of serious damage to eyes.
Method: OECD Test Guideline 405

Respiratory or skin sensitisation

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Exposure routes: Skin
Species: Humans
Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Genotoxicity in vitro:
Concentration: 0 - 10000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Concentration: 0 - 200 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo: No data available

Carcinogenicity

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Species: Mouse, (male and female)
Application Route: Dermal
Exposure time: 92 weeks
Dose: 157.5 mg/kg
Frequency of Treatment: 3 daily
Result: negative

Species: Rat, (male and female)
Application Route: Oral
Exposure time: 24 month(s)
Dose: 0 - 259 mg/kg
Frequency of Treatment: 7 daily
Result: negative

Carcinogenicity -
Assessment : No data available

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
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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.

Reproductive toxicity
Effects on fertility : No data available

Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Effects on foetal development : Species: Rabbit
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 2 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: >= 600 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Mouse
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level: 2 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
Reproductive toxicity - Assessment: No data available

**STOT - single exposure**
No data available

**STOT - repeated exposure**
No data available

**Repeated dose toxicity**

**Components:**
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Species: Rat, male and female
NOAEL: 259 mg/kg
Application Route: Ingestion
Exposure time: 2 yr
Number of exposures: 7 d
Method: Chronic toxicity

Repeated dose toxicity - Assessment: No data available

**Aspiration toxicity**
No data available

**Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**
No data available

**Neurological effects**
No data available

**Further information**

**Product:**
Remarks: No data available
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

**Components:**

Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:

- **Toxicity to fish:**
  - LC50 (Brachydanio rerio (zebrafish)): 12.2 mg/l
  - Exposure time: 96 h
  - Test Type: semi-static test
  - Test substance: Fresh water
  - Method: OECD Test Guideline 203

- **LC50 (Brachydanio rerio (zebrafish)): 4.2 mg/l**
  - Exposure time: 96 h
  - Test Type: static test
  - Test substance: Fresh water
  - Method: OECD Test Guideline 203

**Components:**

Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:

- **Toxicity to daphnia and other aquatic invertebrates:**
  - EC50 (Ceriodaphnia dubia (Water flea)): 4.53 mg/l
  - Exposure time: 48 h
  - Test Type: static test
  - Test substance: Fresh water
  - Method: OECD Test Guideline 202

- **LC50 (Acartia tonsa): 5.5 mg/l**
  - Exposure time: 48 h
  - Test Type: static test
  - Test substance: Marine water

**Components:**

Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:

- **Toxicity to algae:**
  - ErC50 (Selenastrum capricornutum (green algae)): 45 mg/l
  - Exposure time: 48 h
  - Test Type: static test
  - Test substance: Fresh water
  - Method: OECD Test Guideline 201

- **ErC50 (Skeletonema costatum (marine diatom)): 5.2 mg/l**
  - Exposure time: 72 h
  - Test Type: static test
  - Test substance: Marine water
  - Method: ISO 10253

**M-Factor (Acute aquatic toxicity):** No data available

**Toxicity to fish (Chronic toxicity):** No data available
Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC (Daphnia magna (Water flea)): 6.3 mg/l
  - Exposure time: 21 d
  - Test Type: semi-static test
  - Test substance: Fresh water
  - Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity): No data available

Toxicity to microorganisms: No data available

Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Toxicity to soil dwelling organisms:
- NOEC (Eisenia fetida (earthworms)): 316 mg/kg
  - Exposure time: 1,344 h
  - Test substance: Synthetic
  - Method: OECD Test Guideline 222

Plant toxicity: No data available

Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Sediment toxicity (Gammarus pulex (Amphipod)): 2025 mg/kgsedimentdw
  - Study: Acute
  - Test Type: static test
  - Water: Marine water
  - Exposure duration: 10 d

Toxicity to terrestrial organisms: No data available

Ecotoxicology Assessment
Acute aquatic toxicity: No data available
Chronic aquatic toxicity: No data available
Toxicity Data on Soil: No data available
Other organisms relevant to the environment: No data available

Persistence and degradability

Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Biodegradability:
- Inoculum: Marine water
- Concentration: 3 mg/l
- Result: Readily biodegradable.
- Biodegradation: 92 %
- Exposure time: 28 d
Method: OECD Test Guideline 306

Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Biochemical Oxygen Demand (BOD): No data available
Chemical Oxygen Demand (COD): No data available
BOD/COD: No data available
ThOD: No data available
BOD/ThOD: No data available
Dissolved organic carbon (DOC): No data available
Physico-chemical removability: No data available
Stability in water: No data available
Photodegradation: No data available
Impact on Sewage Treatment: No data available

Bioaccumulative potential
Bioaccumulation: No data available

Components:
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts:
Partition coefficient: n-octanol/water: log Pow: -1.3 (20 °C)
pH: 5.43
Method: Partition coefficient

Mobility in soil
Mobility: No data available
Distribution among environmental compartments: No data available
Stability in soil: No data available
Other adverse effects
Environmental fate and pathways : No data available
Results of PBT and vPvB assessment : No data available
Endocrine disrupting potential : No data available
Adsorbed organic bound halogens (AOX) : No data available

Hazardous to the ozone layer
Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: 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).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

Global warming potential (GWP) : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA
Not regulated as dangerous goods
IMDG
Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations

DOT Classification
Not regulated as dangerous goods

SECTION 15. REGULATORY INFORMATION

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

SARA 311/312 Hazards: Acute Health Hazard

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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:

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<thead>
<tr>
<th>Inventory</th>
<th>Reporting Status</th>
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<tr>
<td>CH INV</td>
<td>On the inventory, or in compliance with the inventory</td>
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<tr>
<td>DSL</td>
<td>All components of this product are on the Canadian DSL</td>
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<td>AICS</td>
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<td>TSCA</td>
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Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION**

**Further information**

**NFPA:**

**HMIS® IV:**

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<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
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<table>
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<tr>
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HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "*/" represents the absence of a chronic hazard.

Revision Date: 02/07/2017

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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# SAFETY DATA SHEET

## TERWET® 1004

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