Section 1 - Identification

Product Identifier: TWISTER™ Mineral Deposit / Grout Film Remover
Other means of identification: 2517
Recommended use: Mineral Deposit / Cement Film Remover
Recommended restrictions: For commercial and industrial use only.

Manufacturer / Importer / Supplier / Distributor Information
Company Name: National Chemical Laboratories of PA, Inc.
Address: 401 N. 10th Street - Philadelphia, PA 19123
Telephone: 1 (215) 922-1200
Supplier Email: info@nclonline.com
Contact: CHEM-TEL
Emergency Phone: 1 (800) 255-3924

OSHA defined hazards: Not Classified.

Section 2 - Hazard(s) Identification

 SDS Hazards and Warnings are based on the undiluted product. Refer to diluted SDS for Ready-To-Use Hazards and Warnings.

<table>
<thead>
<tr>
<th>Physical Hazards</th>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Corrosion</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health Hazards</th>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>1A</td>
<td></td>
</tr>
</tbody>
</table>

OSHA defined hazards: Not Classified.

Label Elements
Hazard Symbol:

Signal Word: Danger
Hazard Statement: May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation.
Precautionary statement:
Prevention: Keep only in original container. Use only in a well-ventilated area. Do not breathe mist or vapor. Wash thoroughly after handling. 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/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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. Wash contaminated clothing before reuse.
Storage:
Store locked up. Store in corrosive resistant container with a resistant inner liner
Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC): None known.

Section 3 - Composition/Information on ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Hazardous Components</th>
<th>Ingredient Name</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydrochloric Acid</td>
<td></td>
<td>7647-01-1</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

Section 4 - First-aid Measures

Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center if symptoms develop or persist.
Skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately
Ingestion: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn’t get into the lungs.
Most Important symptoms/effects, acute and delayed: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Indication of immediate medical attention and special treatment: Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General Information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5 - Fire-fighting measures


Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, Corrosive vapors and gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions: Move containers from fire area if you can do it without risk.

General fire hazards: No unusual fire or explosion hazards noted.

Specific Methods: Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6 - Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up: This product is miscible in water. Should not be released into the environment.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

Section 7 - Handling and storage

Precautions for safe handling: Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

Conditions for safe storage, including any incompatibilities: Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Section 8 - Exposure control/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid (CAS 7647-01-1)</td>
<td>TWA</td>
<td>7 mg/m³, 5 ppm</td>
<td></td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values:

<table>
<thead>
<tr>
<th>Component</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid (CAS 7647-01-1)</td>
<td>TLV-C</td>
<td>2 ppm, URT irr</td>
<td></td>
</tr>
</tbody>
</table>

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eyewash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection: Wear appropriate chemical resistant gloves.

Other: Wear appropriate chemical resistant clothing.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. No personal respiratory protective equipment normally required if used with adequate ventilation.

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
SAFETY DATA SHEET

Section 9 - Physical and chemical properties

Appearance
- Physical state: Liquid.
- Form: Clear, thin liquid.
- Color: Colorless.
- Odor: Irritating/pungent odour
- Odor threshold: Not available.
- pH: <1
- Melting point/freezing point: Not available.
- Initial boiling point and boiling range: 212 °F (100 °C)
- Flash point: None to boiling.
- Evaporation rate: Not available.
- Flammability (solid, gas): Not applicable.
- Upper/lower flammability or explosive limits:
  - Flammability limit - lower (%): Not available.
  - Flammability limit - upper (%): Not available.
  - Explosive limit - lower (%): Not available.
  - Explosive limit - upper (%): Not available.
- Vapor pressure: Similar to water.
- Vapor density: Similar to water.
- Relative density: 1.04 ± 0.01
- Relative density temperature: 75 °F (23.89 °C)
- Solubilities: Completely soluble
- Partition Coefficient n-octanol/water: Not available.
- Auto-ignition temperature: Not Available.
- Decomposition temperature: Not Available.
- Viscosity: < 10 cSt
- Viscosity Temperature: 75 °F (23.89 °C)

Section 10 - Stability and reactivity

Reactivity: Reacts violently with strong alkaline substances. This product may react with reducing agents.
Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to Avoid: Do not mix with other chemicals. Contact with incompatible materials.
Hazardous Decomposition:
- Products: Hydrogen chloride.

Section 11 - Toxicological information

Information on likely routes of exposure
- Ingestion: Causes digestive tract burns.
- Inhalation: May cause irritation to the respiratory system.
- Skin contact: Causes severe skin burns.
- Eye contact: Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
- Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects.

Acute toxicity
- May be harmful if swallowed.

<table>
<thead>
<tr>
<th>Components</th>
<th>Level</th>
<th>Type</th>
<th>Code</th>
<th>Species</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid (CAS 7647-01-1)</td>
<td>Acute</td>
<td>Oral</td>
<td>LD50</td>
<td>Rat</td>
<td>700 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Acute</td>
<td>Dermal</td>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt;5010 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Causes serious eye damage.
Respiratory sensitization: Not a respiratory sensitizer.
Skin sensitization: This product is not expected to cause skin sensitization.
Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful.

Section 12 - Ecological Information

Ecotoxicity
Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Component(s)
Hydrochloric Acid, 7647-01-1

Aquatic
Acute | Fish | LC50 | Leuciscus idus | 862 mg/l, 48 hours

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
Not established.

Mobility in soil
No data available.

Mobility in general
No data available.

Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Section 13 - Disposal considerations

Disposal instructions
Dispose in accordance with applicable federal, state, and local regulations.

Local disposal regulations
Dispose of in accordance with local regulations.

Hazardous waste code
Waste codes should be assigned by the user based on the application for which the product was used.

Waste from residues / unused products
Dispose in accordance with all applicable regulations.

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14 - Transport information

DOT
UN number | UN1789
Proper shipping name | HYDROCHLORIC ACID, SOLUTION
Transport hazard class(es) | 8
Packing group | II
Special precautions for user
C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel.
Special provisions
A3, A6, B3, B15 IB2, N41, T8, TP2, TP12
Packaging exemption | 154
Packaging non bulk | 202
Packaging bulk | 242

IATA
UN number | UN1789
UN proper shipping name | HYDROCHLORIC ACID, SOLUTION
Transport hazard class(es) | 8
Packing group | II
Environmental hazards | No
ERG Code | 8L
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

IMDG
UN number | UN1789
UN proper shipping name | HYDROCHLORIC ACID, SOLUTION
Transport hazard class(es) | 8
Packing group | II
Environmental hazards | No
Marine pollutant | No
EmS | F-A, S-B
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
Transportation in bulk according to Annex II of MARPOL 73/78 and IBC Code
This substance/mixture is not intended to be transported in bulk.
Section 15 - Regulatory Information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR707, Subpt. D) Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Components</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid (CAS 7647-01-1)</td>
<td>LISTED</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories
- Immediate Hazard: Yes
- Delayed Hazard: No
- Fire Hazard: No
- Pressure Hazard: No
- Reactivity Hazard: Yes

SARA 302 Extremely hazardous substance
- Yes

SARA 311/312 Hazardous chemical
- Yes

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS #</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid</td>
<td>7647-01-1</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HSPs) List

Component
Hydrochloric Acid (CAS 7647-01-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrochloric Acid (CAS 7647-01-0).

Drug Enforcement Administration (DEA), List 1 2

<table>
<thead>
<tr>
<th>Exempt Chemical Mixtures (21 CFR 1310.12(c))</th>
<th>%WV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric Acid (CAS 7647-01-0)</td>
<td>20</td>
</tr>
</tbody>
</table>

DEA Exempt Chemical Mixtures Code Number

| Hydrochloric Acid (CAS 7647-01-0) | 6545 |

Safe Drinking Water Act (SDWA)
- Not regulated.

Food and Drug Administration (FDA)
- Not regulated.

US state regulations

US.Massachusetts RTK - Substance List

Component
Hydrochloric Acid (CAS 7647-01-1)

US.New Jersey Worker and Community Right-to-Know Act

Component
Hydrochloric Acid (CAS 7647-01-1)

US.Pennsylvania RTK - Hazardous Substances

Component
Hydrochloric Acid (CAS 7647-01-1)

US.Rhode Island RTK

Component
Hydrochloric Acid (CAS 7647-01-1)

US - California Proposition 65

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

International Inventories

Country(s) or region | Inventory Name | On Inventory (yes/no)* |
---------------------|---------------|------------------------|
Australia            | Australian Inventory of Chemical Substances (AICS) | Yes |
Canada               | Domestic Substances List (DSL) | Yes |
Canada               | Non-Domestic Substances List (NDSSL) | No |
China                | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
Europe               | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
Europe               | European List of Notified Chemical Substances (ELINCS) | No |
Japan                | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
Korea                | Existing Chemicals List (ECL) | Yes |
New Zealand          | New Zealand Inventory | Yes |
Philippines          | Philippine Inventory of Chemicals and Chemical Substances | Yes |
United States         | Toxic Substances Control Act (TSCA) Inventory | Yes |
Puerto Rico          | | |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
*A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Section 16 - Other information, including date of preparation or last version

Issue date 4/9/2015
Version # 01

TWISTER™ Mineral Deposit / Grout Film Remover 2517 Page 5 of 6
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