1. IDENTIFICATION

Product Identifier
Product Name: NC Scale Dissolver & Inhibitor

Other means of identification
SDS #: NSR1G, NSR5G
UN/ID No: UN1789
Other Information: Package type: 1, 5, 55 gal.

Recommended use of the chemical and restrictions on use
Recommended Use: Food grade all-purpose scale dissolver.
Restrictions on Use: For professional use only. Product is a concentrate and should be diluted prior to use.

2. HAZARDS IDENTIFICATION

Classification

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
<th>Sub-category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1</td>
<td>Sub-category B</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
<td></td>
</tr>
</tbody>
</table>

Signal Word
Danger

Hazard Statements
Causes severe skin burns and eye damage
May cause respiratory irritation. May cause drowsiness or dizziness
Appearance  Brown liquid

Physical State  Liquid

Odor  Pungent

Precautionary Statements – Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements – Response
Immediately call a POISON CENTER or doctor/physician
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 or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements – Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store away from incompatible materials

Precautionary Statements – Disposal
Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)
May be harmful if swallowed

Other Information
Not Applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>&lt;85</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice  Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation  Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

Eye Contact  In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Ingestion
Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Rinse mouth thoroughly with water. Get medical attention.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

Symptoms
May cause gastrointestinal irritation, nausea, diarrhea, and vomiting. Irritation and corrosive burns to mouth, throat, and stomach. May cause irritation to the mucous membranes and upper respiratory tract. Severe burns to exposed skin.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
Not determined

Specific hazards arising from the chemical
Reacts with oxidizers, chlorinating agents, and most metals. Contact with metals may evolve flammable hydrogen gas.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Use personal protective equipment as required. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for Cleaning Up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scoop material into suitable container for disposal. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wash face, hands and any exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Use personal protection recommended in Section 8.

Conditions for safe storage, including any incompatibilities

Storage Conditions
Store locked up. Store away from incompatible materials. Keep container tightly closed in a dry and well-ventilated place.
Incompatible materials


### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid 7647-01-0</td>
<td>Ceiling: 2 ppm</td>
<td>(vacated) Ceiling: 5 ppm</td>
<td>IDLH: 50 ppm Ceiling: 5 ppm</td>
</tr>
<tr>
<td></td>
<td>(vacated) Ceiling: 7 mg/m³</td>
<td>Ceiling: 5 ppm</td>
<td>Ceiling: 7 mg/m³</td>
</tr>
</tbody>
</table>

**Appropriate engineering controls**

**Engineering Controls**

Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.

**Individual protection measures, such as personal protective equipment**

**Eye/face Protection**

Use tight fitting, splash proof safety goggles. Contact lenses should not be worn when handling this material. Face Mask.

**Skin and Body Protection**

Wear suitable protective clothing and footwear appropriate for the risk of exposure. Wear protective Neoprene™ gloves.

**Respiratory Protection**

Ensure adequate ventilation, especially in confined areas.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Brown liquid</td>
<td>Odor</td>
</tr>
<tr>
<td>Color</td>
<td>Brown</td>
<td>Odor threshold</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limits</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.1525</td>
<td>@ 68°F (20°C)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>

**Other Information**
10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Contact with incompatible materials.

Incompatible materials

Hazardous Decomposition Products
Hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation  May cause irritation of respiratory tract.
Eye Contact  Causes severe eye damage.
Skin Contact  Causes severe skin burns.
Ingestion  May be harmful if swallowed

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>= 700 mg/kg ( Rat )</td>
<td>&gt; 5010 mg/kg ( Rabbit )</td>
<td>= 3124 ppm ( Rat ) 1 h</td>
</tr>
</tbody>
</table>
    7647-01-0              |                |                |                 |

Information on physical, chemical and toxicological effects

Symptoms  Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity  This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td></td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
    7647-01-0              |       |        |       |        |

IARC (International Agency for Research on Cancer)
Group 3 IARC components are “not classifiable as human carcinogens”

Numerical measures of toxicity – Product
Not determined
12. ECOLOGICAL INFORMATION

Ecotoxicity
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid 7647-01-0</td>
<td></td>
<td>282: 96 h Gambusia affinis mg/L LC50 static</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability
Not determined

Bioaccumulation
Not determined

Mobility
Not determined

Other adverse effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note
Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances

DOT
UN/ID No UN1789
Proper shipping name Hydrochloric acid solution
Hazard Class 8
Packing Group II
Reportable Quantity (RQ) 5000 lbs

IATA
UN/ID No UN1789
Proper shipping name Hydrochloric acid solution
Hazard Class 8
Packing Group II

IMDG
UN/ID No UN1789
Proper shipping name Hydrochloric acid solution
Hazard Class 8
Packing Group II
15. REGULATORY INFORMATION

International Inventories
Not determined

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid - 7647-01-0</td>
<td>7647-01-0</td>
<td>&lt;85</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid - 7647-01-0</td>
<td>5000 lb</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid - 7647-01-0</td>
<td>5000 lb</td>
<td>5000 lb</td>
<td>RQ 5000 lb final RQ RQ 2270 kg final RQ</td>
</tr>
</tbody>
</table>

U.S. State Regulations

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid - 7647-01-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. EPA Label Information

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>X</td>
</tr>
</tbody>
</table>

Issue Date: 01-Feb-2011
Revision Date: 11-Mar-2015
Revision Note: Corrections

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet