1. Identification

Product identifier: STAY CLEAN® LIQUID SOLDERING FLUX

Other means of identification:
- SDS number: 0099
- Product Type: Liquid flux
- Recommended use: Soldering of metal.
- Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
- Manufacturer/Supplier: Harris Products Group
  4501 Quality Place
  Mason, Ohio 45040 US
  custservmason@jwharris.com
- Telephone number: 513-754-2000
- Emergency Telephone Numbers: 1-888-609-1762 (US, Canada, Mexico only)

Please quote 333988

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Acute toxicity, oral: Category 4
- Acute toxicity, inhalation: Category 4
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1
- Specific target organ toxicity, single exposure: Category 1 (optic nerve)
- Specific target organ toxicity, single exposure: Category 3 respiratory tract irritation

OSHA defined hazards: Not classified.

Label elements:

- Signal word: Danger
- Hazard statement: Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation. Causes damage to organs (optic nerve).
- Precautionary statement:
  - Prevention: Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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. Specific treatment (see this label). Wash contaminated clothing before reuse.
  - Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.
  - Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

Mixtures:

STAY CLEAN® LIQUID SOLDERING FLUX
Chemical name | CAS number | %
--- | --- | ---
Ammonium chloride | 12125-02-9 | 5-25
Zinc chloride | 7646-85-7 | <30
Hydrochloric acid | 7647-01-0 | <5
Methanol | 67-56-1 | <5

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

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:
- Symptoms of inhalation over-exposure may include sore throat, choking, coughing, difficulty breathing. Lung damage may occur after severe inhalation exposures. Depending on the duration and concentration of over-exposure, skin or eye contact with this product can irritate and burn contaminated tissue. Ingestion overexposure may be harmful or fatal. Prolonged or repeated inhalation over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration.
- Dermatitis, other skin disorders, and respiratory conditions may be aggravated by over-exposure to this product.

Indication of immediate medical attention and special treatment needed: Keep victim under observation. 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. Pulmonary function tests, chest X-rays, and nervous system evaluations may prove useful. Consultation with an ophthalmologist is recommended if eye exposure leads to tissue damage. In case of shortness of breath, give oxygen. Symptoms may be delayed.

General information: If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures


Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: This product is acidic and presents a contact hazard to firefighters. During a fire, irritating and toxic gases (e.g., carbon monoxide, carbon dioxide, hydrogen chloride, nitrogen and zinc oxides, and ammonia) may be generated.

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 so without risk.

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

General fire hazards: No unusual fire or explosion hazards noted. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. 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. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

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. 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

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Do not breathe mist or vapor. Provide adequate ventilation. Do not use in areas without adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Handle and open container with care. Observe good industrial hygiene practices. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from direct sunlight, sources of intense heat, or where freezing is possible. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Material should be stored in secondary containers or in a diked area, as appropriate. Storage and use areas should be covered with impervious materials.

8. Exposure controls/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 7647-01-0)</td>
<td>Ceiling</td>
<td>7 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td>PEL</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>Zinc chloride (CAS 7646-85-7)</td>
<td>PEL</td>
<td>1 mg/m3</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride (CAS 12125-02-9)</td>
<td>STEL</td>
<td>20 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Hydrochloric acid (CAS 7647-01-0)</td>
<td>Ceiling</td>
<td>2 ppm</td>
<td>Fume.</td>
</tr>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td>STEL</td>
<td>250 ppm</td>
<td></td>
</tr>
<tr>
<td>Zinc chloride (CAS 7646-85-7)</td>
<td>TWA</td>
<td>200 ppm</td>
<td>Fume.</td>
</tr>
<tr>
<td>Zinc chloride (CAS 7646-85-7)</td>
<td>STEL</td>
<td>2 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Zinc chloride (CAS 7646-85-7)</td>
<td>TWA</td>
<td>1 mg/m3</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride (CAS 12125-02-9)</td>
<td>STEL</td>
<td>20 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Hydrochloric acid (CAS 7647-01-0)</td>
<td>Ceiling</td>
<td>7 mg/m3</td>
<td>Fume.</td>
</tr>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td>STEL</td>
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<table>
<thead>
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<th>Type</th>
<th>Value</th>
<th>Form</th>
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</thead>
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<td>325 mg/m3</td>
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</table>
US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
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<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc chloride (CAS 7646-85-7)</td>
<td>TWA</td>
<td>250 ppm</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>260 mg/m³</td>
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</tr>
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<td></td>
<td></td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>2 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

Biological limit values

ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td>15 mg/l</td>
<td>Methanol</td>
<td>Urine</td>
<td>*</td>
</tr>
<tr>
<td>* - For sampling details, please see the source document.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exposure guidelines

US - California OELs: Skin designation
Methanol (CAS 67-56-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies
Methanol (CAS 67-56-1) Skin designation applies.

US - Tennessee OELs: Skin designation
Methanol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation
Methanol (CAS 67-56-1) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards
Methanol (CAS 67-56-1) Can be absorbed through the skin.

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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment
Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection
Hand protection Wear neoprene or rubber gloves for routine industrial use.
Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Keep away from food and drink. 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.

9. Physical and chemical properties

Appearance
Physical state Liquid.
Form Liquid. Liquid
Color Clear colorless.

Odor Slightly sweet.
Odor threshold Not available.

pH Acidic.
Melting point/freezing point Not available.
Initial boiling point and boiling range Not available.

Flash point Not flammable.
Evaporation rate > 1 (nBuAc = 1).
Flammability (solid, gas) Not available.
Upper/lower flammability or explosive limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Vapor pressure Not available.
Vapor density 4 (air = 1).
Relative density 1.32 (water = 1).

Solubility(ies)
- Solubility (water) Slightly soluble.

Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

Other information Litmus paper will turn red upon contact with this product. The odor may also act as a distinguishing characteristic of this product.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid Contact with incompatible materials. Extreme temperatures.
Incompatible materials Acid, alkalis and their carbonates, hydrogen cyanide, interhalogens, ammonium nitrate, potassium chloride, lead and silver salts. Strong oxidizing agents. Amines. Do not mix with other chemicals. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals.


11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs by inhalation. If vapors, mists, or sprays of this product are inhaled, they can irritate and burn the nose, throat, and respiratory system. Symptoms of inhalation over-exposure may include sore throat, choking, coughing, and difficulty breathing. Prolonged or repeated over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. It has been reported that a worker developed asthmatic symptoms after performing soldering work with a flux containing Ammonium and Zinc Chlorides (components of this product). It has been reported that inhalation of Methanol (a component of this product) vapors in high concentrations can cause blindness. Severe inhalation overexposure may cause pulmonary edema (a life-threatening accumulation of fluid in the lungs) or pneumonitis. Symptoms of pulmonary edema (e.g., shortness of breath, chest pains) can be delayed for several hours after exposure. Severe inhalation of vapors or fumes (as may occur if individuals are exposed in poorly ventilated areas, such as confined spaces) may be harmful.

Skin contact Causes severe skin burns. Depending on the duration and concentration of over-exposure, skin contact with this product can irritate and burn the skin. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration. Methanol (a component of this product) is readily absorbed through the skin. Because Methanol is a minor component of this product, skin absorption is not anticipated to be a significant route of over-exposure.

Eye contact Depending on the duration and concentration of over-exposure, eye contact with this product can irritate and burn the eyes. Eye over-exposure can cause pain, tearing, and redness. Severe eye over-exposure may cause blindness. Causes serious eye damage.

Ingestion Harmful if swallowed. Causes digestive tract burns. If this flux is ingested, nausea, vomiting, and diarrhea may occur (depending on the amount of the product swallowed). Severe ingestion exposures may result in damage to the tissues of the gastrointestinal system, and death.
Symptoms related to the physical, chemical and toxicological characteristics

Symptoms of inhalation over-exposure may include sore throat, choking, coughing, difficulty breathing. Lung damage may occur after severe inhalation exposures. Depending on the duration and concentration of over-exposure, skin or eye contact with this product can irritate and burn contaminated tissue. Ingestion overexposure may be harmful or fatal. Prolonged or repeated inhalation over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration.

Dermatitis, other skin disorders, and respiratory conditions may be aggravated by over-exposure to this product.

Information on toxicological effects

Acute toxicity
Harmful if inhaled. Harmful if swallowed. May cause respiratory irritation.

<table>
<thead>
<tr>
<th>Component</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid (CAS 7647-01-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>3124 mg/l, 1 Hours</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>900 mg/kg</td>
</tr>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>22500 ppm, 8 hours</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>6200 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation
Causes severe skin burns and eye damage.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
It has been reported that a worker developed asthmatic symptoms after performing soldering work with a flux containing Ammonium and Zinc Chlorides (components of this product).

Germ cell mutagenicity
This product is not expected to cause skin sensitization.

Carcinogenicity
This product is not expected to cause respiratory or developmental effects. Clinical studies on test animals exposed to relatively high doses of Methanol and Zinc Chloride (components of this product) indicate teratogenic effects and adverse reproductive effects.

IARC Monographs. Overall Evaluation of Carcinogenicity
Hydrochloric acid (CAS 7647-01-0) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects. Clinical studies on test animals exposed to relatively high doses of Methanol and Zinc Chloride (components of this product) indicate teratogenic effects and adverse reproductive effects.

Specific target organ toxicity - single exposure
Causes damage to organs (optic nerve). May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity
Very toxic to aquatic life with long lasting effects.
### Components Test Results

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid (CAS 7647-01-0)</td>
<td>Western mosquitofish (Gambusia affinis) 282 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

### Persistence and degradability

No data is available on the degradability of this product.

### Bioaccumulative potential

**Partition coefficient n-octanol / water (log Kow)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Log Kow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol (CAS 67-56-1)</td>
<td>-0.77</td>
</tr>
</tbody>
</table>

### Mobility in soil

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.

### 13. Disposal considerations

#### Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Local disposal regulations

Dispose in accordance with all applicable regulations.

#### Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

#### Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

#### Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport information

#### DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN1760</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Corrosive liquids, n.o.s. (Zinc Chloride, Hydrochloric Acid)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>8</td>
</tr>
<tr>
<td>Class</td>
<td>8</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Label(s)</td>
<td>8</td>
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<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>IB3, T7, TP1, TP28</td>
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<td>Packaging exceptions</td>
<td>154</td>
</tr>
<tr>
<td>Packaging non bulk</td>
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<tr>
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#### IATA

<table>
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<tr>
<td>Transport hazard class(es)</td>
<td>8</td>
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<tr>
<td>Class</td>
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<tr>
<td>Subsidiary risk</td>
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<td>Label(s)</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
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#### IMDG

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</tbody>
</table>
Transport hazard class(es)

Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Environmental hazards
Marine pollutant Yes
EmS Not available.
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

General information DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

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 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>5000</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td></td>
<td></td>
<td></td>
<td></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 - No

SARA 302 Extremely hazardous substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>5000</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride</td>
<td>12125-02-9</td>
<td>5-25</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>&lt;30</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>&lt;5</td>
</tr>
</tbody>
</table>

Other federal regulations

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

Hydrochloric acid (CAS 7647-01-0)
Methanol (CAS 67-56-1)

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

Hydrochloric acid (CAS 7647-01-0)

Safe Drinking Water Act (SDWA) Not regulated.
Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and
Chemical Code Number
Hydrochloric acid (CAS 7647-01-0) 6545

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Hydrochloric acid (CAS 7647-01-0) 20 %WV

DEA Exempt Chemical Mixtures Code Number
Hydrochloric acid (CAS 7647-01-0) 6545

US state regulations

US. Massachusetts RTK - Substance List
Ammonium chloride (CAS 12125-02-9)
Hydrochloric acid (CAS 7647-01-0)
Methanol (CAS 67-56-1)
Zinc chloride (CAS 7646-85-7)

US. New Jersey Worker and Community Right-to-Know Act
Ammonium chloride (CAS 12125-02-9)
Hydrochloric acid (CAS 7647-01-0)
Methanol (CAS 67-56-1)
Zinc chloride (CAS 7646-85-7)

US. Pennsylvania Worker and Community Right-to-Know Law
Ammonium chloride (CAS 12125-02-9)
Hydrochloric acid (CAS 7647-01-0)
Methanol (CAS 67-56-1)
Zinc chloride (CAS 7646-85-7)

US. Rhode Island RTK
Ammonium chloride (CAS 12125-02-9)
Hydrochloric acid (CAS 7647-01-0)
Methanol (CAS 67-56-1)
Zinc chloride (CAS 7646-85-7)

US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Methanol (CAS 67-56-1)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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).

16. Other information, including date of preparation or last revision

Issue date       18-February-2015
Revision date    -
Version #        01

STAY CLEAN® LIQUID SOLDERING FLUX SDS US
924591 Version #: 01 Revision date: - Issue date: 18-February-2015
Discount

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