SAFETY DATA SHEET
Material Identity: TOLUENE
November 12, 2015

SECTION 1 · COMPANY AND PRODUCT IDENTIFICATION

Manufacturers Address: Emergency Phone CHEMTREC: (800) 424-9300
1557 Marietta Road General Information: (404) 355-8220
Atlanta, Georgia 30318 Synonyms: Petroleum Hydrocarbon

SECTION 2 · HAZARDS IDENTIFICATION

GHS Classification:
[ Health ] [ Environmental ] [ Physical ]
Aspiration hazard Category 1 Acute Aquatic Toxicity Category 2 Flammable Liquid Category 2
Acute toxicity, oral Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2B
Reproductive toxicity Category 2
Specific target organ toxicity, single exposure Category 1 central nervous system
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Specific target organ toxicity, single exposure Category 3 narcotic effects
Specific target organ toxicity, repeated exposure Category 2

GHS Label elements, including precautionary statements

Pictograms

Signal Word: Danger

Hazard Phrases:
H225 Highly flammable liquid and vapor. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
May cause damage to organs (Central nervous system) through prolonged or repeated exposure.
H361 Suspected of damaging fertility or the unborn child.

Precautionary Phrases:
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
Rinse skin with water/ shower.
P304 IF INHALED: Remove victim to fresh air.
Store container tightly closed in well-ventilated place. Keep cool. Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3 · COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS Number</th>
<th>%WT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>100</td>
</tr>
</tbody>
</table>
SECTION 4 · FIRST AID MEASURES

FIRST AID PROCEDURES:
Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Skin Contact: Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
Ingestion: Do NOT induce vomiting.. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

SECTION 5 · FIRE FIGHTING MEASURES

Suitable Extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Hazardous combustion products: Oxides of carbon and various hydrocarbons
Fire Fighting Procedures: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Unusual Fire and Explosion Hazards: Containers can build up pressure if exposed to heat and/or fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

SECTION 6 · ACCIDENTAL RELEASE and DISPOSAL MEASURES

Spills: Evacuate all non-essential personnel from the spill area. Eliminate all ignition sources. Suitable protective clothing should be worn. Shut off or plug source of spill. Small spills: absorb on inert media and collect into suitable container.
Large Spills: Dike spill area to contain liquid. Salvage as much re-useable liquid as possible into a suitable container. Avoid contaminating ground and surface water.

SECTION 7 · STORAGE AND HANDLING

Handling: Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Keep container closed and tightly sealed when not in use. Use good hygiene practices.
Storage: This material is a static accumulator. Use non-sparking tools. Store in a cool, dry, ventilated area, away from incompatible substances. Store only in approved properly labeled containers. Containers should be grounded and bonded.

SECTION 8 · EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Provide explosion-proof ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated below.

Exposure Limits: Toluene 20 ppm ACGIH 200 ppm OSHA

Personal Protective Equipment (PPE):
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin: If prolonged or repeated skin contact is likely, wear appropriate protective gloves.
Clothing: Selection of protective clothing depends on work conditions, potential exposure conditions and may include gloves, boots, suits and other protective items.
Respirators: Where adequate ventilation is not available an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of OSHA Respiratory Protection Standard, 29 CFR 1920.134. In confined areas, use a self-contained breathing apparatus.
SECTION 9 · PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>40 °F</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>895 °F</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>230 °F</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>-134 °F</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>22 mmHg</td>
</tr>
<tr>
<td>Vapor Density (Air-1)</td>
<td>3.1</td>
</tr>
<tr>
<td>Odor/Appearance</td>
<td>Clear colorless liquid with hydrocarbon odor.</td>
</tr>
<tr>
<td>Flammability Limits</td>
<td>Lower: 1  Upper: 7</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.865</td>
</tr>
<tr>
<td>Volatile %</td>
<td>100</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td>2</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Slightly</td>
</tr>
</tbody>
</table>

SECTION 10 · STABILITY AND REACTIVITY

- **Chemical Stability:** Stable under normal use and temperature conditions.
- **Conditions to Avoid:** Keep away from heat, flame and other potential ignition sources.
- **Incompatible materials:** Strong oxidizing agents
- **Decomposition Products:** When combusted, oxides of carbon and various hydrocarbons.

SECTION 11 · TOXIOLOGICAL INFORMATION

- **Signs and Symptoms of Overexposure:**
  - **Skin:** Contact can cause redness and irritation. Severity depends on the amount and duration of exposure.
  - **Eyes:** Vapors are irritating to the eyes. Liquid contact will cause stinging and tearing.
  - **Inhalation:** Excessive inhalation of high concentrations may be harmful. Mist or vapor can irritate the throat and lungs. Breathing this material may cause central nervous system depression.
  - **Ingestion:** If swallowed this material may irritate the mucous membranes of the mouth throat and esophagus. Aspiration of this material into the lungs may result in damage or death.

**Acute oral toxicity:**
- Toluene: LD50 rat: > 5,580 mg/kg

**Acute inhalation toxicity:**
- Toluene: LC50 rat: 12,500 - 28,800 mg/m3

**Acute dermal toxicity:**
- Toluene: LD50 rabbit: 12,196 mg/kg

SECTION 12 · ECOLOGICAL INFORMATION

- **Aquatic Toxicity:** LC50 - Oncorhynchus mykiss (rainbow trout) - 7.63 mg/l - 96 h
  - NOEC - Pimephales promelas (fathead minnow) - 5.44 mg/l - 7 d
- **Bio-accumulative potential:** This product is readily biodegradable.
- **Mobility:** Accidental spillage may lead to penetration in the soil.

SECTION 13 · DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
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SECTION 14 · TRANSPORTATION

U.S. DEPARTMENT OF TRANSPORTATION (Road or Rail):

Proper Shipping Name: Toluene
Hazard Class: 3
UN Number: 1294
Packaging Group: II

SECTION 15 · REGULATORY INFORMATION

US FEDERAL REGULATIONS

Comprehensive Environmental Response and Liability Act (CERCLA)

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. The reportable quantity (RQ) for this material is 1000 pounds. If appropriate, immediately report to the National Response Center (800/424-8802) as required by U.S.Federal Law. Also contact appropriate state and local regulatory agencies.

Toxic Substance Control Act (TSCA): All components of this product are listed on the TSCA inventory list.

SARA Section 311/312 (40 CFR 370) Hazard Categories:
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA Section 313 (40 CFR 372) Hazard Categories: This product contains the following toxic chemical subject to reporting requirements: Toluene

Clean Water Act: This product contains Toluene a chemical listed under the CWA.

Clean Air Act: This product contains no chemicals that are listed under the CAA.

California Prop 65: This product contains Toluene a chemical known by the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16 · OTHER INFORMATION

SDS Revision Date: April 2015

NFPA Ratings: HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0

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