1. IDENTIFICATION

Product Identifier
Product Name Isononanoic Acid (Kyowanoic-N)

Other means of identification
SDS # NC-013

Recommended use of the chemical and restrictions on use.
Recommended Use Raw material for synthetic lubricant and metal soap. Inhibitor additive agent. Alkyd resin modifying agent.

Supplier Address
Neuchem Inc.
2062 Union Street, Suite 300
San Francisco, CA 94123 USA
www.neuchem.com

Emergency Telephone Number
Company Phone Number Phone: 415-345-9353
Fax: 415-345-9350
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America) Account No. 100534

2. HAZARDS IDENTIFICATION

Classification

| Acute toxicity - Oral | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |

Signal Word
Danger

Hazard Statements
Harmful if swallowed
Causes skin irritation
Causes serious eye damage

Appearance Clear liquid
Physical State Liquid
Odor Characteristic feeble
Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
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: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)
May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 5, 5-Trimethylhexanoic Acid</td>
<td>3302-10-1</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The product is C9 carboxylic acid containing >95% as 3,5,5-Trimethylhexanoic acid.

4. FIRST-AID MEASURES

First Aid Measures

General Advice
Provide this SDS to medical personnel for treatment.

Eye Contact
Immediately flush with plenty of water for up to 15 minutes. Immediate medical attention is required.

Skin Contact
Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if irritation persists after washing.

Inhalation
Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician / poison center if individual's condition declines or if symptoms persist.

Ingestion
Rinse mouth. Do not induce vomiting. Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable, take to hospital along with these instructions. Get medical attention if any discomfort occurs.

Self-Protection of the First Aider
First aid personnel must be aware of own risk during rescue.
Most important symptoms and effects

Symptoms Itching, burning, redness, and tearing of eyes. Vapors and mist may irritate throat and respiratory system and cause coughing. Ingestion may cause irritation and malaise. May be harmful if absorbed through skin.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Foam, carbon dioxide, dry powder or water fog.

Unsuitable Extinguishing Media Do not use water jet as an extinguisher, as this will spread the fire.

Specific Hazards Arising from the Chemical
Product is not flammable. Heating and fire, toxic vapors/gases may be formed.

Hazardous Combustion Products Carbon monoxide, Carbon dioxide (CO2).

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. Move containers from fire area if you can do so without risk. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate the area. Avoid inhalation of vapors/spray and contact with skin and eyes. Wear suitable protective clothing. For personal protection, see Section 8 of the MSDS. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

For Emergency Responders Follow applicable OSHA regulations (29 CFR 1910.120).

Environmental Precautions Avoid discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Absorb spillage with non-combustible, absorbent material.

Methods for Clean-Up Collect in marked containers and deliver to approved depot. Flush area with water. For waste disposal, see Section 13 of the MSDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Wash face, hands, and any exposed skin thoroughly after handling. Avoid inhalation of vapors and contact with skin and eyes. Do not eat, drink or smoke when using this product.
Conditions for safe storage, including any incompatibilities

Storage Conditions  Store in tightly closed original container in a well-ventilated area. Store in a cool, dry place.

Incompatible Materials  Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines  The following information is given as general guidance

Appropriate engineering controls

Engineering Controls  Mechanical ventilation or local exhaust ventilation is recommended.
Maintain eye wash fountain and quick drench facilities in work area.

Individual protection measures, such as personal protective equipment

Eye/Face Protection  Wear approved safety goggles.

Skin and Body Protection  Wear suitable gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier. Wear apron or protective clothing in case of contact.

Respiratory Protection  Respiratory protection must be used if air contamination exceeds acceptable level. Seek advice from supervisor on the company's respiratory protection standards. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

General Hygiene Considerations  Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse.

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>Clear liquid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic feeble</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>3.6 (Saturated aqueous solution)</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>-30 °C / -22 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>225 °C / 437 °F</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>127 °C / 260.6 °F</td>
<td>Open cup</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>1.2% v/v</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>3.9 kPa 100°C (212°F)</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>5.5</td>
<td>(Air=1)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.9</td>
<td>@ 68°F (20°C)</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>0.17 g/100 g 22°C (71.6°F)</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>440 °C / 824 °F</td>
<td></td>
</tr>
</tbody>
</table>
Decomposition Temperature Not available
Kinematic Viscosity Not determined
Dynamic Viscosity 11.2 mPa s 22°C (71.6°F)
Explosive Properties Not determined
Oxidizing Properties Not determined
Molecular Weight 158.2 g/mol

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to Avoid
Heat, sparks, flames.

Incompatible Materials
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide (CO2).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes serious eye damage.

Skin Contact Causes skin irritation. May be harmful in contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion 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>3, 5, 5-Trimethylhexanoic Acid</td>
<td>= 1100 mg/kg ( Rat )</td>
<td>&gt; 2000 mg/kg ( Rat )</td>
<td>-</td>
</tr>
</tbody>
</table>

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.
Numerical measures of toxicity
Not determined

12. ECOLOGICAL INFORMATION

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

Persistence/Degradability
The product is not readily biodegradable. BOD: 35.2% / 28 days

Bioaccumulation
Potential to bioaccumulate is low. (BCF: < 3.1 – 7.0)

Mobility

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>3, 5, 5-Trimethylhexanoic Acid</td>
<td>3.08</td>
</tr>
<tr>
<td>3302-10-1</td>
<td></td>
</tr>
</tbody>
</table>

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated Packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

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

DOT
Not regulated

IATA
Not regulated

IMDG
Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA
Not Listed
<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td>Complies</td>
</tr>
<tr>
<td>NDSL</td>
<td>Not Listed</td>
</tr>
<tr>
<td>EINECS</td>
<td>Complies</td>
</tr>
<tr>
<td>ELINCS</td>
<td>Not Listed</td>
</tr>
<tr>
<td>ENCS</td>
<td>Complies</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>Complies</td>
</tr>
<tr>
<td>PICCS</td>
<td>Complies</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
</tbody>
</table>

**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
- AICS - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 311/312 Hazard Categories**

- **Acute Health Hazard**: Yes
- **Chronic Health Hazard**: No
- **Fire Hazard**: No
- **Sudden Release of Pressure Hazard**: No
- **Reactive Hazard**: No

**SARA 313**

Not determined

**US State Regulations**

**U.S. State Right-to-Know Regulations**

Not determined
16. OTHER INFORMATION

**NFPA**

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

**HMIS**

<table>
<thead>
<tr>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**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