ISOPHORONE

PRODUCT IDENTIFICATION
CAS NO. 2855-13-2
EINECS NO. 220-666-8
FORMULA C_{10}H_{22}N_{2}
MOL WT. 170.30
H.S. CODE 2933.29

TOXICITY Oral rat LD50: 1030 mg/kg
SYNONYMS 5-Amino-1,3,3-Trimethyl Cyclohexanemethanamine;
1-Amino-3-aminomethyl-3,5,5-trimethyl cyclohexane; 3-Aminomethyl-3,5,5-trimethyl
cyclohexylamine; 3-Aminomethyl-3,5,5-trimethylcyclohexylamin (German); 3-Aminometil-3,5,5-
trimeticciclohexilamina (Spanish); 3-Aminométhyl-3,5,5-triméthyl cyclohexylamine (French);

DERIVATION

CLASSIFICATION

PHYSICAL AND CHEMICAL PROPERTIES
PHYSICAL STATE Clear liquid
MELTING POINT 10 C
BOILING POINT 245 - 247 C
SPECIFIC GRAVITY 0.920 - 0.925
SOLUBILITY IN WATER Miscible
pH 11.5 - 12.5 (10% Sol.)
VAPOR DENSITY 5.9
AUTOIGNITION 380 C
NFPA RATINGS Health: 3; Flammability: 1; Reactivity: 0
REFRACTIVE INDEX 1.4877
FLASH POINT 112 C
STABILITY Stable under ordinary conditions. Hygroscopic.

APPLICATIONS
Diamines are compounds which contain two amino groups. Both aliphatic (linear or branched from
short C-2 chain to fatty length) and aromatic diamines are used as a monomer to form copolymers
like nylons, polyesters and polyurethanes for characteristic properties. They can form a protein-like
structure at both ends of each monomer. The chain length characteristics with recurring amide
groups provide a variety of physical properties and are further processed into various applications
including plastics, oil-modified and moisture-area types of urethane coatings, polyamides for
printing inks, dimer acids, textiles, lubricant additive as scale and corrosion inhibitor, epoxy curing
agent, isocyanates, water treatment chemicals, biocides, and pharmaceutical intermediates.

Cycloaliphatic diamines are used in urethane and epoxy coatings for light-stable, weather-resistant
properties. It is used in water proofing and paving concreting. It is used in manufacturing
disocyanates and polyamides. Common cycloaliphatic diamines include isophorone diamine, 1,2-
diaminocyclohexane, 1,4-bis[(aminocyclohexyl)methane, 1,3-bis(aminomethyl)cyclohexane,
bis(aminomethyl)norbornane. They are versatile intermediate to produce leather, rubber products,
plastics, pesticides, dyes, and photo sensitive polymers. It is used in manufacturing disocyanates
and polyamides. Aliphatic diamines are the most common epoxy curing agent. Members include:

- Diethylenetriamine (CAS RN: 111-40-0)
- Trientine (CAS RN: 112-24-3)
- N,N-Diethyltrimethylenediamine (CAS RN: 104-78-9)
- Menthane diamine (CAS RN: 80-52-4)
- Aminoethylpiperazine (CAS RN: 140-31-8)
- 1,3-Xylenediamine (CAS RN: 1477-55-0)
- Isophorone diamine (CAS RN: 2855-13-2)

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<thead>
<tr>
<th><strong>SALES SPECIFICATION</strong></th>
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<tr>
<td><strong>APPEARANCE</strong></td>
<td>Clear liquid</td>
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<tr>
<td><strong>ASSAY</strong></td>
<td>99.5% min</td>
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<tr>
<td><strong>AMINE VALUE</strong></td>
<td>640 mg/kg</td>
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<td><strong>COLOR, APHA</strong></td>
<td>20 max</td>
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<tr>
<th><strong>TRANSPORTATION</strong></th>
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<tr>
<td><strong>PACKING</strong></td>
<td>200kgs in drum</td>
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<tr>
<td><strong>HAZARD CLASS</strong></td>
<td>8 (Packing group:III)</td>
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<td><strong>UN NO.</strong></td>
<td>2289</td>
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<th><strong>OTHER INFORMATION</strong></th>
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