## Section 1 – Product and Company Identification

**1.1 GHS Product Identifier** : 2,2-Dimethylpropane

**Other means of identification** : Neopentane, Neopentane; tert-Pentane; Tetramethylcarbon; Tetramethylmethane; 1,1,1-Trimethylethane; 2,2-Dimethylpropane; Neo-C5H12; UN 2044; dimethylpropane

**Product Number** : 315206

**Chemical Formula** : $C_5H_{12}$

**CAS Number** : 463-82-1

**EC Number** : 207-343-7

**1.2 Recommended use** : Laboratory chemicals, Manufacture of substances

**1.3 Supplier's detail** : Wiley Companies
1245 South 6th Street
Coshocton, Ohio 43812.
(740) 622-0755.

**1.4 Emergency Telephone number** : (800) 633-8253.
**International number** : (801) 629-0667.

## Section 2 – Hazards Identification

**2.1 GHS Classification of the substance or mixture**
**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**
Flammable gases (category 1)
Gases under pressure (liquefied gas)
Aspiration hazard (category 1)
Aquatic hazard long term (category 1)

**2.2 GHS Label elements, including precautionary statements**

Pictogram

Signal word Danger

Hazard statement(s)

| | |
|---|---|
| H220 | Extremely flammable gas. |
| H280 | Contains gas under pressure; may explode if heated. |
| H304 | Causes skin irritation. May be fatal if swallowed and enters airways. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statement(s)

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P331 | Do NOT induce vomiting. |
| P377 | Leaking gas fire: Do not extinguish, unless leak can be stopped safely. |
| P381 | Eliminate all ignition sources if safe to do so. |
| P410 + P403 | Protect from sunlight. Store in a well-ventilated place. |

### 2.3 Hazards not otherwise classified or not covered by GHS

This product may displace oxygen and cause rapid suffocation.

## Section 3 - Composition / Information on Ingredients

### Substance/Mixture

| | |
|---|---|
| Chemical name | : 2,2-Dimethlypropane |
| Synonyms | : Neopentane, Propane 2,2-Dimethyl, Tert-Pentane, Tetramethylmethane, 1,1,1-Trimethylethane |
| Chemical Formula | : C5H12 |
| CAS Number | : 463-82-1 |
| EC Number | : 207-343-7 |

### Hazardous components

| Component | Classification | Concentration |
|---|---|---|
| 2,2-Dimethylpropane | Flammable gas (Category 1)<br>Aspiration hazard (Category 1)<br>Gas under pressure (liquefied gas)<br>Aquatic hazard (long term) | 99% |

## Section 4 - First Aid Measures

### 4.1 Description of necessary first aid measures

**If inhaled**
Remove person to fresh air. Consult a physician if necessary.
If breathing is stopped, administer artificial respiration if trained to do so.

**In case of skin contact**
Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

**In case of eye contact**
Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

**If ingested**
Do NOT induce vomiting. Never give liquid to an unconscious person. Consult a physician if necessary.

**4.2 Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labeling section 2.2.

**4.3 Indication of immediate medical attention and special treatment needed, if necessary**
Contact poison control center immediately if large quantities have been ingested or inhaled.

## Section 5 – Fire Fighting Measure

**5.1 Extinguishing media**
**Suitable extinguishing media**
Water spray, carbon dioxide, dry chemical or alcohol resistant foam.

**Unsuitable extinguishing media**
None known.

**5.2 Specific hazards arising from the chemical**
Carbon monoxide, carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.

**5.3 Special protective equipment for fire fighters**
Cool vessels and containers with sprayed water. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH for firefighters (approved or equivalent) and full protective gear.

**5.4 Special precautions for fire fighters**
Containers may explode when heated. Vapours can accumulate in low areas. Evacuate all personnel from the danger area. Remove ignition sources if safe to do so. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product release point. Avoid

heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

## Section 6 – Accidental Release Measures

**6.1 Personal precautions, protective equipment and emergency procedures.**

Use personal protective equipment. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Avoid breathing vapours, mist or gas. Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Evacuate personnel to safe areas. Prevent contamination of soil, drains and surface water. Take up residue with absorbent material and dispose of in accordance with all local, state and federal regulations.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

**6.3 Methods and materials for containment and cleaning up**

Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Utilize non-sparking tools.

## Section 7 – Handling and Storage

**7.1 Precautions for safe handling**

Wear all appropriate personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid vapour inhalation. Do not eat, drink or smoke when using this product. Ensure good ventilation and local exhaust extraction in work place. Keep away from source of ignition. Use only non-sparking tools. Use only explosion-proof equipment. Take measures to prevent buildup of electrostatic charge.

**7.2 Conditions for safe storage, including any incompatibilities**

Store material in D.O.T. approved containers. Follow all applicable local, state, and federal regulations. Store in a cool, dry, well-ventilated place, in securely closed original container.

## Section 8 – Exposure Controls / Personal Protection

### 8.1 Control parameters

**Occupational exposure limits**

| Ingredient name | Exposure limits |
|---|---|
| 2,2 -Dimethylpropane | ACGIH TLV<br>TWA 1000 ppm 8 hours Pentane all isomers |

### 8.2 Appropriate engineering controls

Engineering Controls:
Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs.

### 8.3 Individual protection measures

Administrative Controls:
Handle in accordance with good industrial hygiene and safety practice. When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA). Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face protection regulations (29 CFR 1910.133). Wear chemically protective gloves. Wear a chemically protective suit. Wear flame retardant protective clothing. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## Section 9 – Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | : Liquefied gas. |
| Odour | : Gasoline like odor |
| Odour Threshold | : No data available. |
| pH | : No data available. |
| Melting point/freezing | : -16.4 °C (2.5 °F) |

| | | |
|---|---|---|
| point | | |
| Initial boiling point and boiling point range | : | 9.5 °C. (49.1 F). |
| Flash point | : | -7 °C (19.4 °F). |
| Evaporation rate | : | No data available. |
| Flammability (solid, gas) | : | No data available. |
| Upper/lower flammability Or explosive limits | : | 1.4% - 7.5% |
| Vapour pressure | : | 21.9 psia at 21.1˚C |
| Vapour density | : | 2.49 @101.325 kPa @ 25 degrees C |
| Relative density | : | 0.613 at 0 °C (liq) |
| Water solubility | : | 33.2 mg/L at 25 deg |
| Partition coefficient: n-octanol/water | : | log Kow = 3.11 |
| Auto-ignition Temperature | : | 450°C (842°F) |
| Decomposition Temperature | : | No data available. |
| Viscosity | : | No data available. |
| Molecular weight | : | 72.15 g/mol. |

## Section 10 – Stability and Reactivity

**10.1 Reactivity**
No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability**
This material is stable at room temperature in closed containers under normal storage and handling conditions.

**10.3 Possibility of hazardous reactions**
Vapours may form explosive mixture in air. Reacts with strong oxidizers, causing fire and explosion hazard. Attacks some plastics, rubbers, and coatings.

**10.4 Conditions to avoid**
Avoid contact with strong oxidizing agents.
Heat, flames and other sources of ignition.
Take measures to prevent buildup of electrostatic charge.

### 10.5 Incompatible materials
Reacts with strong oxidizers, causing fire and explosion hazard. Attacks some plastics, rubbers, and coatings.

### 10.6 Hazardous decomposition products
Thermal oxidative decomposition of this material can produce carbon monoxide and carbon dioxide.

## Section 11 – Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**
LD50 Mouse ip 100 mg/kg
LC50 Mouse inhalation 340,000 ppm/2 hr

**Skin corrosion/irritation**
No data available.

**Serious eye damage/eye irritation**
No data available.

**Respiratory or skin sensitization**
No data available.

**Germ cell mutagenicity**
No data available.

**Carcinogenicity**

ARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available.

**Specific target organ toxicity – single exposure**
No data available.

**Specific target organ toxicity – repeated exposure**
No data available.

**Aspiration hazard**
The substance or mixture is known to cause human aspiration toxicity hazards

**Information on the likely routes of exposure**
Inhalation and skin contact.

**Symptoms related to the physical, chemical and toxicological characteristics**
No data available.

**Delayed and immediate effects and also chronic effects from short and long-term exposure**
No data available.

**Numeric measures of toxicity**
No data available.

## Section 12 – Ecological Information

**12.1 Toxicity**
No data available.

**12.2 Persistence and degradability**
No data available.

**12.3 Bioaccumulative potential**
An estimated BCF of 50 was calculated for 2,2-dimethylpropane(SRC), using a log Kow of 3.11(1) and a regression-derived equation(2).

**12.4 Mobility in soil**
Low.

**12.5 Other adverse effects**
No know significant effects or critical hazards.

## Section 13 – Disposal Considerations

**13.1 Disposal Methods**

Follow all applicable local, state, and federal regulations. Dispose of contents/container in accordance with local/regional/national/international regulations.

## Section 14 – Transport Information

| | DOT | IMDG | IATA |
|---|---|---|---|
| **UN number** | UN2044 | UN2044 | UN2044 |
| **Un proper shipping name** | 2,2-Dimethylpropane | 2,2-DIMETHYLPROPANE, MARINE POLLUTANT | 2,2-Dimethylpropane |
| **Transport hazard class** | 2.1 | 2.1 | 2.1 |
| **Packing group** | - | - | - |
| **Marine pollutant** | No | Yes | - |

## Section 15 – Regulatory Information

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Fire hazard, acute health hazard, sudden release.

## Section 16 – Other Information

| | HMIS | | |
|---|---|---|---|
| Health - Chronic | | | NFPA |
| Health Hazard | 1 | Health Hazard | 2 |
| Flammability | 4 | Fire Hazard | 4 |
| Physical | 2 | Reactivity | 0 |

**Prepared By:**
Wiley Companies
The EH&S Department

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