SAFETY DATA SHEET

GHEMSERVIGE

1. Identification

| Product identifier | Cyclohexaneacetic acid | | |
|---------------------------------|--|----------------------------|---|
| Other means of identification | | | |
| Item | N-11528 | | |
| Recommended use | For Laboratory Use Only | | |
| Recommended restrictions | None known. | | |
| Manufacturer/Importer/Supplier/ | Distributor information | | |
| Manufacturer | | | |
| Company name | Chem Service, Inc. | | |
| Address | 660 Tower Lane | | |
| | West Chester, PA 19380 United States | | |
| Telephone | Toll Free | 800-452-9994 | L . |
| · | Direct | 610-692-3026 | 3 |
| Website | www.chemservice.com | | |
| E-mail | info@chemservice.com | | |
| Emergency phone number | Chemtrec US Chemtrec outside US | 800-424-9300 +1 703-527-38 | |
| | Chemilec buiside 03 | +1703-527-56 | 100 |
| 2. Hazard(s) identification | | | |
| Physical hazards | Not classified. | | |
| Health hazards | Skin corrosion/irritation | | Category 2 |
| | Serious eye damage/eye irritatio | on | Category 2A |
| | Specific target organ toxicity, sir | igle exposure | Category 3 respiratory tract irritation |
| Environmental hazards | Not classified. | | |
| OSHA defined hazards | Not classified. | | |
| Label elements | | | |
| | \wedge | | |
| | | | |
| | • | | |
| Signal word | Warning | | |
| Hazard statement | Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. | | |
| Precautionary statement | | | · · · · · · · · · · · · · · · · · · · |
| | | | |

PreventionAvoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only
outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.ResponseIf on skin: Wash with plenty of water. 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. Call a poison center/doctor if you feel unwell. If skin
irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical
advice/attention. Take off contaminated clothing and wash 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. |
| Hazard(s) not otherwise classified (HNOC) | None known. |

Supplemental information

3. Composition/information on ingredients

None.

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|--|---|--|---|
| Cyclohexaneacetic acid | | 5292-21-7 | 100 |
| 4. First-aid measures | | | |
| Inhalation | Remove victim to fresh air and keep at rest in a p CENTER or doctor/physician if you feel unwell. | position comfortable for bre | eathing. Call a POISO |
| Skin contact | Remove contaminated clothing. Wash with plent medical advice/attention. Wash contaminated clo | | irritation occurs: Get |
| Eye contact | Immediately flush eyes with plenty of water for at present and easy to do. Continue rinsing. Get me | | |
| Ingestion | Rinse mouth. Get medical attention if symptoms | occur. | |
| Most important symptoms/effects, acute and delayed | Severe eye irritation. Symptoms may include stin vision. May cause respiratory irritation. Skin irrita | | |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat s Symptoms may be delayed. | ymptomatically. Keep victi | m under observation. |
| General information | If you feel unwell, seek medical advice (show the personnel are aware of the material(s) involved, a | | |
| 5. Fire-fighting measures | | | |
| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon | dioxide (CO2). | |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this w | vill spread the fire. | |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be fo | ormed. | |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full prote | ective clothing must be wor | n in case of fire. |
| Fire fighting equipment/instructions | Use water spray to cool unopened containers. | | |
| Specific methods | Use standard firefighting procedures and conside | er the hazards of other invo | olved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. | | |
| 6. Accidental release meas | sures | | |
| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people appropriate protective equipment and clothing du or spilled material unless wearing appropriate pro Local authorities should be advised if significant s protection, see section 8 of the SDS. | uring clean-up. Do not touc otective clothing. Ensure a | h damaged container dequate ventilation. |
| Methods and materials for containment and cleaning up | Large Spills: Stop the flow of material, if this is wi possible. Cover with plastic sheet to prevent spre and place into containers. Following product reco | eading. Absorb in vermicul | ite, dry sand or earth |
| | Small Spills: Wipe up with absorbent material (e. remove residual contamination. | g. cloth, fleece). Clean sur | face thoroughly to |
| | Never return spills to original containers for re-us | e. For waste disposal, see | section 13 of the SD |
| Environmental precautions | Avoid discharge into drains, water courses or ont | • | |
| 7. Handling and storage | | | |
| Precautions for safe handling | Provide adequate ventilation. Avoid contact with personal protective equipment. Observe good inc | | /ear appropriate |
| Conditions for safe storage, including any incompatibilities | Store locked up. Store in original tightly closed co (see Section 10 of the SDS). | ontainer. Store away from | incompatible material |
| 8. Exposure controls/perse | onal protection | | |
| Occupational exposure limits | No exposure limits noted for ingredient(s). | | |

Occupational exposure limitsNo exposure limits noted for ingredient(s).Biological limit valuesNo biological exposure limits noted for the ingredient(s).

| 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 | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. |
| Other | Wear appropriate chemical resistant clothing. |
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | 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

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|--|--------------------------------|
| Appearance | |
| Physical state | Solid. |
| Form | Solid. Crystalline Solid |
| Color | White |
| Odor | Not available. |
| Odor threshold | Not available. |
| рН | Not available. |
| Melting point/freezing point | 87.8 °F (31 °C) |
| Initial boiling point and boiling range | 467.6 °F (242 °C) |
| Flash point | 233.6 °F (112.0 °C) Closed Cup |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or expl | osive limits |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | 0.004 kPa at 25 °C |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Flammability class | Combustible IIIB estimated |
| Molecular formula | C8H14O2 |
| Molecular weight | 142.2 g/mol |
| | |

Oxidizing properties Not oxidizing.

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. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| Information on likely routes of ex | (posure |
|--|--|
| Inhalation | May cause irritation to the respiratory system. |
| Skin contact | Causes skin irritation. |
| Eye contact | Causes serious eye irritation. |
| Ingestion | Expected to be a low ingestion hazard. |
| Symptoms related to the physical, chemical and toxicological characteristics | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain. |
| Information on toxicological effe | cts |
| Acute toxicity | May cause respiratory irritation. |
| Skin corrosion/irritation | Causes skin irritation. |
| Serious eye damage/eye irritation | Causes serious eye irritation. |
| Respiratory or skin sensitization | |
| Respiratory sensitization | Not a respiratory sensitizer. |
| Skin sensitization | This product is not expected to cause skin sensitization. |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| US. OSHA Specifically Regu Not listed. | lated Substances (29 CFR 1910.1001-1050) |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | May cause respiratory irritation. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| 12. Ecological information | |
| Ecotoxicity | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| 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 consideration | IS |
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| | Disease in accordance with all evolutions and there |

Dispose in accordance with all applicable regulations.

Local disposal 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 | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| 14. Transport information | |
| DOT | |
| Not regulated as dangerous g | oods. |
| IATA Not regulated as dangerous g | joods. |
| IMDG | |
| Not regulated as dangerous g | |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| 15. Regulatory information | n |
| US federal regulations | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |
| TSCA Section 12(b) Export | Notification (40 CFR 707, Subpt. D) |
| Not regulated. CERCLA Hazardous Substa | nce List (40 CFR 302.4) |
| Not listed. SARA 304 Emergency relea | se notification |
| Not regulated. US. OSHA Specifically Regu Not listed. | ulated Substances (29 CFR 1910.1001-1050) |
| Superfund Amendments and Re | eauthorization Act of 1986 (SARA) |
| Hazard categories | Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No |
| SARA 302 Extremely hazard Not listed. | lous substance |
| SARA 311/312 Hazardous chemical | No |
| SARA 313 (TRI reporting) Not regulated. | |
| Other federal regulations | |
| Clean Air Act (CAA) Section | n 112 Hazardous Air Pollutants (HAPs) List |
| Not regulated. Clean Air Act (CAA) Section | n 112(r) Accidental Release Prevention (40 CFR 68.130) |
| Not regulated. | · · · · · · · · · · · · · · · · · · · |
| Safe Drinking Water Act | Not regulated. |

(SDWA)

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100) Not listed.

US. Massachusetts RTK - Substance List Not regulated.

US. New Jersey Worker and Community Right-to-Know Act Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

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

*A "Yes" indicates that all components of this product comply 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 | 01-25-2016 |
|--------------|--|
| Version # | 01 |
| NFPA ratings | Health: 2 Flammability: 0 Instability: 0 |
| Disclaimer | The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc. |
| | Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals. |
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