Cyclopentasiloxane (D5, Decamethylcyclopentasiloxane)

Safety Data Sheet · complies with OSHA HazCom 2012 (29 CFR 1910.1200) / GHS · CAS 541-02-6

§1 IDENTIFICATION

Product Name	Cyclopentasiloxane (Decamethylcyclopentasiloxane, D5)
Common Name	D5; cyclopentasiloxane; decamethylcyclopentasiloxane
Recommended Use	Cosmetics ingredient; volatile carrier fluid
Restrictions on Use	Industrial and professional use only

Manufacturer / Supplier

Company	RawSource Inc.
Address	515 E Las Olas Blvd, Suite 1301, Fort Lauderdale, FL 33301, USA
Telephone	+1 (754) 306-4363
Email / Web	solutions@rawsource.com · rawsource.com
Emergency Telephone	+1 (754) 306-4363 (business hours) — for a chemical emergency also contact your national poison / emergency service

§2 HAZARD(S) IDENTIFICATION

GHS Hazard Classification (OSHA HazCom 2012)	Flammable liquids — Category 4. Health: Not classified. Environmental: Not classified.
Signal Word	Warning
Pictogram(s)	None required

Hazard statement(s)

H227 : Combustible liquid.

Precautionary statement(s)

P210 : Keep away from flames and hot surfaces. No smoking.

P280 : Wear protective gloves / eye protection.

P370+P378 : In case of fire: use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

P403 : Store in a well-ventilated place.

P501 : Dispose of contents/container in accordance with local, regional and national regulations.

Other hazards which do not result in classification (2.3)

Decamethylcyclopentasiloxane (D5) is included on the EU REACH Candidate List of Substances of Very High Concern (27 June 2018, Decision ED/61/2018) as vPvB (Article 57(e)), and as PBT (Article 57(d)) when it contains ≥ 0.1 % w/w octamethylcyclotetrasiloxane (D4). Not classified as PBT under US regulations.

Classification basis: leading producer SDS and the large majority of ECHA C&L notifications classify D5 as not hazardous to health as supplied; flash point 77 °C (closed cup) places the liquid in flammability Category 4 (60-93 °C band).

§3 COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name	Decamethylcyclopentasiloxane
CAS No.	541-02-6
EC No.	208-764-9
Concentration	Approximately 100%
Classification of the substance	Skin Corrosion/Irritation Category 2; Serious Eye Damage/Eye Irritation Category 2; STOT-SE Category 3 (respiratory tract irritation); H315, H319, H335

§4 FIRST-AID MEASURES

If inhaled
If fumes, aerosols or combustion products are inhaled, remove from the contaminated area. Other measures are usually unnecessary.

In case of skin contact
Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in the event of irritation.

In case of eye contact
Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

If swallowed
Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

§5 FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Foam; dry chemical powder; carbon dioxide; water spray or fog (large fires only)
Unsuitable Extinguishing Media	Avoid water jets onto liquid pools

Specific hazards arising from the chemical
Combustible; a slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion the product may emit irritating or toxic fumes, acrid or corrosive smoke; mists containing combustible material may be explosive.

Special protective equipment and precautions for firefighters
Wear full body protective clothing with self-contained breathing apparatus. Cool fire-exposed containers with water spray from a protected location. Prevent fire-control run-off from entering drains or water courses.

§6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance by using protective equipment.

Environmental precautions
Prevent, by any means available, spillage from entering drains or water courses. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up
Minor spills: contain and absorb small quantities with vermiculite or other inert absorbent material; wipe up and collect residues in a suitable labelled container. Silicone fluids, even in small quantities, may present a slip hazard. Major spills: clear the area, rope off if necessary, absorb with a suitable absorbent as soon as practically possible and collect for disposal; final cleaning may require use of steam, solvents or detergents.

§7 HANDLING AND STORAGE

Precautions for safe handling
Avoid all personal contact, including inhalation. Use in a well-ventilated area. Avoid smoking, naked lights or ignition sources. Do not allow clothing wet with material to remain in contact with skin. Keep containers securely sealed when not in use and wash hands after handling.

Conditions for safe storage, including incompatibilities
Store in original containers in a cool, dry, well-ventilated area, away from incompatible materials and foodstuff containers. Check containers regularly for leaks.

§8 EXPOSURE CONTROLS / PERSONAL PROTECTION

DNEL (worker, inhalation, systemic, chronic)	97.3 mg/m3
DNEL (worker, inhalation, local, chronic)	24.2 mg/m3
PNEC (water, fresh)	1.2 ug/L
Occupational Exposure Band	E (band limit <= 0.1 ppm)

Appropriate engineering controls

General exhaust is adequate under normal operating conditions. If a risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in enclosed storage areas.

Eye/Face Protection	Safety glasses with side shields or chemical goggles
Hand Protection	Chemical protective gloves (e.g. PVC)
Skin/Body Protection	Overalls and PVC apron; safety footwear
Respiratory Protection	Approved respirator if a risk of overexposure exists

§9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Colour	No data available
Odour	No data available
pH (as supplied)	7
Melting Point	-38 degrees C
Boiling Point	210 °C
Flash Point	77 °C (closed cup, producer SDS; literature 73–77 °C — within GHS Category 4 band)
Vapour Density (air = 1)	1
Viscosity	No data available
Solubility	Immiscible with water

§10 STABILITY AND REACTIVITY

Reactivity	See conditions to avoid and incompatible materials
Chemical Stability	Product is considered stable. Hazardous polymerisation will not occur.
Possibility of Hazardous Reactions	Hazardous polymerisation will not occur
Conditions to Avoid	Heat, open flames and other ignition sources
Incompatible Materials	None specifically identified by the supplier

Hazardous decomposition products

Combustion may produce irritating or toxic fumes, carbon oxides and silicon dioxide.

§11 TOXICOLOGICAL INFORMATION

Acute Toxicity (oral, rat)	LD50 > 5000 mg/kg
Acute Toxicity (dermal, rabbit)	LD50 > 15248 mg/kg
Acute Toxicity (inhalation, rat)	LC50 8.67 mg/L (4 h)
Skin Corrosion / Irritation	Skin irritation observed on prolonged or repeated exposure (Category 2)
Serious Eye Damage / Irritation	Eye irritation (Category 2)
Carcinogenicity	A 2-year vapour-inhalation study in rats reported uterine endometrial tumours in females at the highest dose (160 ppm) only; human relevance not established. Genotoxicity assays negative.
Reproductive Toxicity	No evidence of adverse effects on fertility or development in animal studies

§12 ECOLOGICAL INFORMATION

Aquatic Toxicity (fish, 96 h LC50)	> 0.016 mg/L
Aquatic Toxicity (algae, 96 h EC50)	> 0.012 mg/L
Aquatic Toxicity (crustacea, 48 h EC50)	> 0.0029 mg/L
Persistence and Degradability	High persistence in water/soil and in air
Bioaccumulative Potential	High (log KOW = 5.2)
Mobility in Soil	Low (KOC = 145200)
PBT / vPvB Assessment	Does not fulfil PBT or vPvB criteria

12.5 Results of PBT and vPvB assessment

Meets EU REACH Annex XIII vPvB criteria; meets PBT criteria when containing ≥ 0.1 % w/w D4 (ECHA Member State Committee conclusion behind Decision ED/61/2018).

§13 DISPOSAL CONSIDERATIONS

Recycle wherever possible. Consult a licensed waste-management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by burial in a land-fill licensed to accept chemical wastes, or by incineration in a licensed apparatus (after admixture with suitable combustible material).

Do not allow wash water from cleaning or process equipment to enter drains; it may be necessary to collect all wash water for treatment before disposal. Disposal to sewer may be subject to local laws and regulations, which should be considered first. Decontaminate empty containers before disposal.

§14 TRANSPORT INFORMATION

UN RTDG (Land)	Not regulated for transport of dangerous goods
IATA-DGR (Air)	Not regulated for transport of dangerous goods
IMDG Code (Sea)	Not regulated for transport of dangerous goods
Marine Pollutant	No

§15 REGULATORY INFORMATION

US TSCA	Listed / Active
US OSHA HazCom 2012	Classified — see Section 2 (Flammable liquids Category 4)
EU REACH — SVHC Candidate List	Listed 27 June 2018 (Decision ED/61/2018): vPvB (Art. 57(e)); PBT (Art. 57(d)) when ≥ 0.1 % w/w D4
EU REACH — Annex XVII entry 70 (as amended by Reg (EU) 2024/1328)	Wash-off cosmetics ≥ 0.1 %: restricted since 31 Jan 2020. General ≥ 0.1 % placing-on-market restriction in force since 6 June 2026, with industrial derogations (use as monomer/intermediate, in polymerisation, formulation/(re)packing of mixtures, production of articles, non-metal surface treatment) keeping B2B bulk supply lawful. Other/leave-on cosmetics: from 6 June 2027. Medical devices and (veterinary) medicinal products: from 6 June 2031. D5 as dry-cleaning solvent: until 6 June 2034.

Customers formulating rinse-off or leave-on cosmetics for the EU market are responsible for compliance with Annex XVII entry 70 concentration limits.

§16 OTHER INFORMATION

Prepared and issued by RawSource Inc. This SDS supersedes any prior version for this material. It relates only to the specific material identified above.

This Safety Data Sheet is provided in good faith and is correct to the best of RawSource's knowledge at the date of publication. It is a guidance for safe handling, use, processing, storage, transport, disposal and release, and is not a warranty or quality specification. It relates only to the specific material identified above. Users must determine the conditions of safe use in their own context.