

MSDS SAFETY DATA SHEET

Chloroform 94% (6% PC solution)

C.A.S. Number: 67-66-3

I) Chemical Product and Company Identification

Product Name: 2D_CL_PC, Chloroform 94% (6% PC solution).

CAS No.: 108-90-7

Manufacturer: HQ Graphene, G.Meirstraat 1, 9728TB Groningen, Netherlands

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II) Composition and Information on Ingredients

Chloroform: 94%

PC: Polycarbonate 6%

III) Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Pictogram: GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer

Rept.2 H361 Suspected of damaging fertility of the unborn child

STOT RE 2 H373 May cause damage to the lung, the kidneys, the liver and the blood through prolonged or repeated exposure. Route of exposure: Oral, Inhalative

Pictogram: GHS07

Acute Tox. 4 H302 Harmful if swallowed

Acute Tox. 4 H32 Harmful if inhaled

Skin Irrit.2 H315 Causes skin irritation

Eye Irrit.2 H318 Causes serious eye irritation

STOT SE 3 H336 May cause drowsiness or dizziness

Other hazards that to not result in classification: NA

Label elements

Labelling according to Regulation (EC) No 1272/2008

Pictogram

Hazard pictograms: GHS07 and GHS08

Signal word Warning

Hazard statement(s)

H301: Harmful if swallowed

H332 Harmful if inhaled

H315 Causes skin irritation

H319 Causes serious eye irritation

H351 Suspected of causing Cancer

H361 Suspected of damaging fertility of the unborn child

H336 May cause drowsiness or dizziness

H373 May cause damage to the lung, the kidneys, the liver and the blood through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Precautionary statement(s)

P260: Do not breathe dust/fumes/gas/mist/vapours/spray.

P261 Avoid breathing dust/fumes/gas/mist/vapours/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection

P305+P351+P338 OFOM EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405: Store locked up

P501: Dispose of contents/container in accordance with local/regional/national/international regulation
Other hazards
Results of PBT and vPvB assessment
PBT: NA
vPvB: NA

IV) First aid measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician, seek immediate medical advice

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Flush eyes with water for several minutes. Consult a physician.

If swallowed: Seek medical treatment

Most important symptoms and effects, both acute and delayed

Harmful if swallowed

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

Suspected of causing Cancer

Suspected of damaging fertility of the unborn child

May cause drowsiness or dizziness

May cause damage to the lung, the kidneys, the liver and the blood through prolonged or repeated exposure.

Route of exposure: Oral, Inhalative.

V) Fire fighting measures

Suitable extinguishing media: CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released: CO₂, CO and HCl

Protective equipment: Wear self-contained breathing apparatus for firefighting.

VI) Accidental release measures

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions: Do not let product enter drains. Do not let enter the ground/soil. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust.

Keep in suitable, closed containers for disposal.

VII) Handling and storage

Precautions for safe handling:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place. Store away from oxidising agents

VIII) Exposure control/personal protection

Components with workplace control parameters:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Personal protective equipment

Breathing equipment: Use breathing protection with high concentrations.

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash hands during breaks and at the end of the work.

Eye protection: Safety glasses with side-shields

Skin and body protection:

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday

Control parameters: Components with critical values that require monitoring at the workplace: Chloroform,
Long-term value: 9.9mg/m³, 2ppm

IX) Physical and chemical properties

Appearance: transparent solvent

Color: transparent

pH: NA

Melting point -62 °C

Boiling point: 61 °C

Flash point: NA

Ignition temperature: 982 °C

Lower explosion limit: NA

Upper explosion limit: NA

Water solubility: NA

X) Stability and reactivity

Chemical stability: NA

Conditions to avoid: NA

Materials to avoid: NA

Hazardous decomposition products by reaction: NA

Hazardous decomposition products formed under fire conditions. CO₂, CO and HCl

XI) Toxicological information

Acute toxicity

Oral LD₅₀: 695mg/kg (rat)

Other information on acute toxicity: NA

Skin corrosion/irritation: causes skin irritation

Serious eye damage/eye irritation: Irritant to eye

Respiratory or skin sensitization: NA

Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance

Carcinogenicity: EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

EPA-L: Likely to produce cancer in humans

EPA-NL: Not likely to be carcinogenic to humans

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by routes of administration at sites of histologic types or by mechanisms not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggest that the agent is not likely to cause cancer in humans except under uncommon

or unlikely routes or levels of exposure. The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance

Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance

Specific target organ toxicity - single exposure: NA

Specific target organ toxicity - repeated exposure: May cause damage to the lung, the kidneys, the liver and the blood through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

XII) Ecological information

Toxicity: NA

Persistence and degradability: NA

Bioaccumulative potential: NA

Mobility in soil: NA

Ecotoxicological effects: Remark: Very toxic for fish. Do not allow material to be released to the environment without proper governmental permits. Water danger class 3 (Self-assessment): extremely hazardous for water. Do not allow product to reach ground water, water bodies or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into soil. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms

PBT and vPvB assessment: NA

Other adverse effects: NA

XIII) Disposal considerations

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

XIV) Transport information

Proper Shipping Name:

IATA: 1888 CHLOROFORM

Transport hazard class(es): 6.1 Toxic substances

Packing group: III

XV) Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture Australian Inventory of Chemical Substances Substance is not listed. Standard for the Uniform Scheduling of Drugs and Poisons Substance is not listed. National regulations Information about limitation of use: Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals. Water hazard class: Water danger class 3 (Self-assessment): extremely hazardous for water. Other regulations, limitations and prohibitive regulations ELINCS (European List of Notified Chemical Substances) Substance is not listed. Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorization for use) Substance is not listed. REACH - Pre-registered substances Substance is listed.

XVI) Other information

DATE OF REVISION: August 2015

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