



SAFETY DATA SHEET

n-Hexane

According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577, as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name n-Hexane
CAS number 110-54-3
EC number 203-777-6

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Research and development. Industrial use
Uses advised against Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier Molekula Ltd.
Lingfield Way,
Darlington,
DL1 4XX,
United Kingdom
+44 (0) 3302000333
info@molekula.com

1.4. Emergency telephone number

+44 (0) 7769276927

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

Physical hazards Flam. Liq. 2 - H225
Health hazards Skin Irrit. 2 - H315 Repr. 2 - H361 STOT SE 3 - H336 STOT RE 2 - H373 Asp. Tox. 1 - H304
Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements

EC number 203-777-6

Hazard pictograms



Signal word

Danger

n-Hexane

Hazard statements

H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H361 Suspected of damaging fertility or the unborn child.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe vapour/ spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P312 Call a POISON CENTRE/doctor if you feel unwell.
P314 Get medical advice/ attention if you feel unwell.
P331 Do NOT induce vomiting.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current UK criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	n-Hexane
CAS number	110-54-3
EC number	203-777-6
Chemical formula	CH ₃ (CH ₂) ₄ CH ₃

SECTION 4: First aid measures

4.1. Description of first aid measures

n-Hexane

General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention if symptoms are severe or persist. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately.
Skin contact	Rinse with water.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	A single exposure may cause the following adverse effects: Headache. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Narcotic effect.
Ingestion	May cause irritation. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin contact	Redness. Irritating to skin.
Eye contact	May be slightly irritating to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
-----------------------------	------------------------

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	The product is flammable. Containers can burst violently or explode when heated, due to excessive pressure build-up. Flammable liquid and vapour. Vapours may be ignited by a spark, a hot surface or an ember. Vapours may form explosive mixtures with air. Fire-water run-off in sewers may create fire or explosion hazard.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Carbon dioxide (CO ₂). Carbon monoxide (CO).

5.3. Advice for firefighters

n-Hexane

Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Evacuate area. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Promptly remove any clothing that becomes contaminated. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate.
-----------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6.2. Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.
----------------------------------	-------------------------------------------------------------------------------------------------------------

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Do not allow material to enter confined spaces, due to the risk of explosion. Absorb small quantities with paper towels and evaporate in a safe place. Once evaporation is complete, place paper in a suitable waste disposal container and seal securely. Large Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. The contaminated absorbent may pose the same hazard as the spilled material. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.
--------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.
------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

SECTION 7: Handling and storage

7.1. Precautions for safe handling

n-Hexane

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. The product is flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Suspected of damaging fertility. Suspected of damaging the unborn child. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store away from incompatible materials (see Section 10). Store locked up. Keep away from oxidising materials, heat and flames. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Keep away from heat, sparks and open flame.

Storage class

Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 20 ppm 72 mg/m³

WEL = Workplace Exposure Limit.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, wear gloves that are proven to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

n-Hexane

Hygiene measures	Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is 'UKCA'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges suitable for intended use should be used. Full face mask respirators with replaceable filter cartridges suitable for intended use should be used. Half mask and quarter mask respirators with replaceable filter cartridges suitable for intended use should be used.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Hydrocarbons.
Odour threshold	No information available.
pH	pH (concentrated solution): 7.0
Melting point	-95°C/-139°F
Initial boiling point and range	69°C/156.2°F @ 1013 hPa
Flash point	-22°C / -7.6°F Method: Closed cup.
Evaporation rate	15.8
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 8.1% (V) Lower flammable/explosive limit: 1.0% (V)
Vapour pressure	100 hPa @ 9.8°C/49.64°F
Vapour density	No information available.
Relative density	No information available.
Solubility(ies)	0.01 g/l water @ 25°C/77°F
Partition coefficient	log Pow: ca.4 at 20°C/68°F (lit)
Auto-ignition temperature	225°C/437°F
Decomposition Temperature	No information available.
Viscosity	(dynamic) 0.3 mPa s @ 25°C/77°F

9.2. Other information

Molecular weight	86.18
-------------------------	-------

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details.
-------------------	----------------------------------------------------------------

n-Hexane

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions The following materials may react strongly with the product: Oxidising agents.
Oxides of nitrogen.
The following materials may react violently with the product:
halogens
Risk of ignition or formation of inflammable gases or vapours with:
Peroxides.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition. Containers can burst violently or explode when heated, due to excessive pressure build-up. Static electricity and formation of sparks must be prevented.

10.5. Incompatible materials

Materials to avoid Oxidising materials. Acids - oxidising. May attack some plastics, rubber and coatings.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.
Carbon dioxide (CO₂). Carbon monoxide (CO).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Summary Based on available data the classification criteria are not met.

Acute toxicity - dermal

Summary Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Summary Based on available data the classification criteria are not met.

Skin corrosion/irritation

Summary Causes skin irritation.

Serious eye damage/irritation

Summary Based on available data the classification criteria are not met.

Respiratory sensitisation

Summary Based on available data the classification criteria are not met.

Skin sensitisation

Summary Based on available data the classification criteria are not met.

Germ cell mutagenicity

Summary Based on available data the classification criteria are not met.

Carcinogenicity

Summary Based on available data the classification criteria are not met.

IARC carcinogenicity None of the ingredients are listed or exempt.

n-Hexane

Reproductive toxicity

Summary Suspected of damaging the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Summary May cause drowsiness or dizziness.

Target organs Central nervous system

Specific target organ toxicity - repeated exposure

Summary May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Summary May be fatal if swallowed and enters airways. Pneumonia may be the result if vomited material containing solvents reaches the lungs.

General information Avoid contact during pregnancy/while nursing. May damage fertility. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Headache. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo. Narcotic effect.

Ingestion May cause irritation. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Skin contact Redness. Irritating to skin.

Eye contact May be slightly irritating to eyes.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target organs Central nervous system

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

Summary Based on available data the classification criteria are not met.

Chronic aquatic toxicity

Summary Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient log Pow: ca.4 at 20°C/68°F (lit)

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

n-Hexane

13.1. Waste treatment methods

General information	The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods	Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General	For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.
----------------	-----------------------------------------------------------------------------------------------------------------------------------------

14.1. UN number

UN No. (ADR/RID)	1208
UN No. (IMDG)	1208
UN No. (ICAO)	1208
UN No. (ADN)	1208

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	HEXANES
Proper shipping name (IMDG)	HEXANES
Proper shipping name (ICAO)	HEXANES
Proper shipping name (ADN)	HEXANES

14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

Transport labels



14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II

n-Hexane

ICAO packing group II

ADN packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-E, S-D

ADR transport category 2

Emergency Action Code 3YE

Hazard Identification Number 33
(ADR/RID)

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment
Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

US - TSCA

Present.

SECTION 16: Other information

n-Hexane

Abbreviations and acronyms used in the safety data sheet	<p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>IATA: International Air Transport Association.</p> <p>ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>CAS: Chemical Abstracts Service.</p> <p>ATE: Acute Toxicity Estimate.</p> <p>LC50: Lethal Concentration to 50 % of a test population.</p> <p>LD50: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p>
Classification abbreviations and acronyms	<p>Flam. Liq. = Flammable liquid</p> <p>Asp. Tox. = Aspiration hazard</p> <p>Repr. = Reproductive toxicity</p> <p>Skin Irrit. = Skin irritation</p> <p>STOT RE = Specific target organ toxicity-repeated exposure</p> <p>STOT SE = Specific target organ toxicity-single exposure</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
Classification procedures according to SI 2019 No. 720	<p>Asp. Tox. 1 - H304: STOT RE 2 - H373: STOT SE 3 - H336: Skin Irrit. 2 - H315: Repr. 2 - H361: : Expert judgement. Aquatic Chronic 2 - H411: : Expert judgement. Flam. Liq. 2 - H225: : Expert judgement.</p>
Training advice	<p>Only trained personnel should use this material.</p>
Revision date	<p>13/10/2022</p>
Revision	<p>2</p>
Supersedes date	<p>14/06/2021</p>
SDS number	<p>190</p>
Hazard statements in full	<p>H225 Highly flammable liquid and vapour.</p> <p>H304 May be fatal if swallowed and enters airways.</p> <p>H315 Causes skin irritation.</p> <p>H336 May cause drowsiness or dizziness.</p> <p>H361 Suspected of damaging fertility or the unborn child.</p> <p>H373 May cause damage to organs through prolonged or repeated exposure.</p> <p>H411 Toxic to aquatic life with long lasting effects.</p>

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.