

**n-Undecane**

Version 1.2

Revision Date 2022-07-20

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

Product Name : n-Undecane
Material : 1032355, 1033001, 1089690, 1032354, 1033002

Use : Solvent

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:**Health:**

866.442.9628 (North America)
1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic
Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371
67042473. (24 hours.)

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Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com

SECTION 2: Hazards identification**Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Flammable liquids, Category 4
 Aspiration hazard, Category 1

Labeling

Symbol(s)

:



Signal Word

: Danger

Hazard Statements

: H227: Combustible liquid.
 H304: May be fatal if swallowed and enters airways.

Precautionary Statements

: **Prevention:**
 P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
 P280 Wear protective gloves/ eye protection/ face protection.
Response:
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P331 Do NOT induce vomiting.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
 P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.

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Carcinogenicity:**IARC**

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

NTP

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

SECTION 3: Composition/information on ingredients

Synonyms : Hendecane
n-Undecane 99%

Molecular formula : C₁₁H₂₄

Component	CAS-No.	Weight %
n-Undecane	1120-21-4	99

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 65°C (149°F)
Method: ASTM D 56

Autoignition temperature : 201.85°C (395.33°F)
estimated

Suitable extinguishing media : Carbon dioxide (CO₂).

Unsuitable extinguishing media : High volume water jet.

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- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
- Hazardous decomposition products : Carbon oxides.

SECTION 6: Accidental release measures

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Storage

- Requirements for storage areas and containers : No smoking. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright

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to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use : Solvent

SECTION 8: Exposure controls/personal protection**Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

- Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant protective clothing. Footwear protecting against chemicals.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

Physical state : liquid

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Color : Colorless
Odor Threshold : No data available

Safety data

Flash point : 65°C (149°F)
Method: ASTM D 56

Lower explosion limit : 0.7 %(V)

Upper explosion limit : 5.1 %(V)

Oxidizing properties : No

Autoignition temperature : 201.85°C (395.33°F)
estimated

Molecular formula : C₁₁H₂₄

Molecular weight : 156.35 g/mol

pH : Not applicable

Pour point : No data available

Boiling point/boiling range : 196°C (385°F)
estimated

Vapor pressure : 0.28 MMHG
at 20°C (68°F)

Relative density : 0.74

Density : 744.1 g/l

Water solubility : insoluble

Partition coefficient: n-
octanol/water : No data available

Viscosity, dynamic : 1.311 cP

Relative vapor density : 0.74
(Air = 1.0)

Evaporation rate : Not applicable

Percent volatile : > 99 %

SECTION 10: Stability and reactivity

Reactivity : Stable under recommended storage conditions.

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Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous decomposition products : Carbon oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Acute oral toxicity**

n-Undecane : LD50: > 5,000 mg/kg
Species: Rat
Method: OECD Test Guideline 401
Information given is based on data obtained from similar substances.

Acute inhalation toxicity

n-Undecane : LC50: > 6100 mg/m³ Exposure time: 4 h
Species: Rat
Test atmosphere: vapor
Method: OECD Test Guideline 403
Information given is based on data obtained from similar substances.

Acute dermal toxicity

n-Undecane : LD50: > 3,160 mg/kg
Species: Rabbit
Information given is based on data obtained from similar substances.

Skin irritation

n-Undecane : No skin irritation. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin. Information given is based on data obtained from similar substances.

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Eye irritation

n-Undecane : No eye irritation
Information given is based on data obtained from similar substances.

Sensitization

n-Undecane : Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances.

Repeated dose toxicity

n-Undecane : Species: Rat, male and female
Sex: male and female
Application Route: Inhalation
Exposure time: 13 wk
Number of exposures: 6h/d; 5d/wk
NOEL: > 10,400 mg/m³
Method: OECD Test Guideline 413

Genotoxicity in vitro

n-Undecane : Test Type: Ames test
Result: negative

Reproductive toxicity

n-Undecane : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 100, 300, 1000 mg/kg/d
Exposure time: 46 d
Number of exposures: Daily
Method: OECD Guideline 422
NOAEL Parent: \geq 1,000 mg/kg
NOAEL F1: \geq 1,000 mg/kg
No adverse effects expected

Developmental Toxicity

n-Undecane : Species: Rat
Application Route: Inhalation
Exposure time: GD 6-15
Number of exposures: 6h/d
Method: OECD Guideline 414
NOAEL Teratogenicity: \geq 5220 mg/m³
NOAEL Maternal: \geq 5220 mg/m³
Information given is based on data obtained from similar substances.

Aspiration toxicity

n-Undecane : May be fatal if swallowed and enters airways.

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Further information : Solvents may degrease the skin.

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SECTION 12: Ecological information**Toxicity to fish**

n-Undecane : LL50: > 10 - < 30 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Method: OECD Test Guideline 203
Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

n-Undecane : LL50: > 10,000 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
static test Method: ISO TC147/SC5/WG2
Information given is based on data obtained from similar substances.

Toxicity to algae

n-Undecane : EL50: > 100,000 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (Marine Algae)
static test Method: ISO 10253
Information given is based on data obtained from similar substances.

Biodegradability

n-Undecane : aerobic
Result: Readily biodegradable.
89.8 %
Testing period: 28 d
Method: OECD Test Guideline 301F
Information given is based on data obtained from similar substances.

Bioaccumulation

n-Undecane : Bioconcentration factor (BCF): 337.8
Method: QSAR modeled data
This material is not expected to bioaccumulate.

Mobility

n-Undecane : Medium: Air
Method: Petrorisk
Content: 41.8 %

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: Medium: Water
Method: Petrorisk
Content: 2.71 %

: Medium: Soil
Method: Petrorisk
Content: 8.17 %

: Medium: Sediment
Method: Petrorisk
Content: 47.32 %

Additional ecological information : Harmful to aquatic life.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard n-Undecane : Harmful to aquatic life.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
UN2330, UNDECANE, 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN2330, UNDECANE, 3, III, (65 °C c.c.)

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IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2330, UNDECANE, 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN2330, UNDECANE, 3, III, (D/E)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

30,UN2330,UNDECANE, 3, III

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN2330, UNDECANE, 3, III

Maritime transport in bulk according to IMO instruments**SECTION 15: Regulatory information****National legislation**

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Aspiration hazard

CERCLA Reportable Quantity : This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

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.

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Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : n-Undecane - 1120-21-4

California Prop. 65 Components : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH	:	Not in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Other AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory

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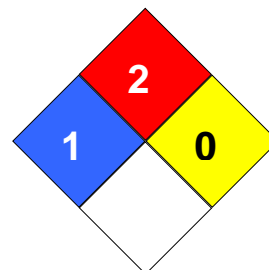
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China IECSC : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 1
Fire Hazard: 2
Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 696500

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical	TWA	Time Weighted Average

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	Substances in China		
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		