



SAFETY DATA SHEET PENTANE

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

1.1. Product identifier

Product name	PENTANE
Product number	354
Synonyms; trade names	N-PENTANE, N-PENTANE 95%, NORPAR 5S
REACH registration number	01-2119459286-30-XXXX
CAS number	109-66-0
EU index number	601-006-00-1
EC number	203-692-4

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

Identified uses	Industrial application Surface coating Cleaning agent. Additive for Agrochemicals Fuel additive. Polymers Lab Reagent
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 sds@univar.com +44 1274 267306
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	354

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC/1272/2008)

Physical hazards	Flam. Liq. 1 - H224
Health hazards	STOT SE 3 - H336 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) F+;R12 Xn;R65 R66 R67 N;R51/53

2.2. Label elements

EC number	203-692-4
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PENTANE

Pictogram



Signal word

Danger

Hazard statements

H224 Extremely flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing vapour/ spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P312 Call a POISON CENTER/ doctor if you feel unwell.
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.

Supplemental label information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	PENTANE
REACH registration number	01-2119459286-30-XXXX
EU index number	601-006-00-1
CAS number	109-66-0
EC number	203-692-4
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Get medical attention.
Ingestion	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give plenty of water to drink. 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	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Inhalation	Vapours in high concentrations are anaesthetic. Symptoms following overexposure may include the following: Headache. Fatigue. Dizziness. Upper respiratory irritation. May cause an asthma-like shortness of breath.
Ingestion	Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin contact	Prolonged contact may cause redness, irritation and dry skin. Product has a defatting effect on skin.
Eye contact	May cause temporary eye irritation.

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

Notes for the doctor	Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
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	Oxides of the following substances: Carbon. Extremely flammable. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back.
Hazardous combustion products	Oxides of: Carbon.

5.3. Advice for firefighters

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Take precautionary measures against static discharges. No smoking, sparks, flames or other sources of ignition near spillage. Avoid inhalation of spray mist and contact with skin and eyes. Provide adequate ventilation.
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6.2. Environmental precautions

Environmental precautions	Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.
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6.4. Reference to other sections

Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet.
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SECTION 7: Handling and storage

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7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Eliminate all sources of ignition. Keep away from heat, sparks and open flame. Avoid inhalation of vapours and spray/mists. Provide adequate ventilation. Vapours may accumulate on the floor and in low-lying areas.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. 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 600 ppm 1800 mg/m³

Short-term exposure limit (15-minute): WEL

WEL = Workplace Exposure Limit

Ingredient comments WEL = Workplace Exposure Limits

DNEL

Industry - Dermal; Long term systemic effects: 432 mg/kg/day
 Industry - Inhalation; Long term systemic effects: 3000 mg/m³
 Consumer - Oral; Long term systemic effects: 214 mg/kg/day
 Consumer - Dermal; Long term systemic effects: 214 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 643 mg/m³

PNEC

- Fresh water; 0.23 mg/l
- Sediment; 1.2 mg/kg
- Soil; 0.55 mg/kg
- STP; 3.60 mg/l
- Marine water; 0.23 mg/l
- Intermittent release; 0.88 mg/l

8.2. Exposure controls

Protective equipment



Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. EN 166

Hand protection

Wear protective gloves. Breakthrough time for gloves >480 min. 0,35 mm It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl alcohol (PVA). Viton rubber (fluoro rubber).

Other skin and body protection

Wear protective clothing. EN14605

Hygiene measures

When using do not eat, drink or smoke. Wash hands at the end of each work shift and before eating, smoking and using the toilet.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Gas filter, type AX. Gas and combination filter cartridges should comply with European Standard EN14387.

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SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Characteristic.
Odour threshold	990
pH	Not applicable.
Melting point	No specific test data are available.
Initial boiling point and range	< 36°C @
Flash point	~ -50°C
Evaporation rate	12 (butyl acetate = 1) 1 (diethyl ether = 1)
Upper/lower flammability or explosive limits	Upper flammable/explosive limit: 7.8 Lower flammable/explosive limit: 1.4
Vapour pressure	720 hPa @ 20°C 270 hPa @ 0°C 1570 hPa @ 50°C
Vapour density	2.5
Relative density	0.632 @ 15°C
Solubility(ies)	Insoluble in water.
Partition coefficient	log Pow: 3.39
Auto-ignition temperature	404°C
Decomposition Temperature	No specific test data are available.
Viscosity	Kinematic viscosity ≤ 20.5 mm ² /s.
Explosive properties	Vapours may form explosive mixtures with air.
Oxidising properties	Not applicable.

9.2. Other information

Volatile organic compound	This product contains a maximum VOC content of 84% .
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Does not decompose when used and stored as recommended.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	The following materials may react with the product: Strong oxidising agents.
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10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time. Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges.
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10.5. Incompatible materials

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Materials to avoid Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of the following substances: Carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 40.0

Species Rat

ATE inhalation (vapours mg/l) 40.0

Skin corrosion/irritation

Animal data Not irritating. Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

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

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure May cause drowsiness or dizziness. May cause eye and respiratory system irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory system irritation. Vapours may cause drowsiness and dizziness.

Ingestion Harmful: may cause lung damage if swallowed.

Skin contact Repeated exposure may cause skin dryness or cracking.

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Eye contact May irritate eyes.

SECTION 12: Ecological Information

Ecotoxicity The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity

Toxicity The product contains a substance which is toxic to aquatic organisms.

Acute toxicity - fish LL₅₀, EL50, IL50, : >1 <= 10 mg/l,

Acute toxicity - aquatic invertebrates LL₅₀, EL50, IL50, : >1 <= 10 mg/l,

Acute toxicity - aquatic plants LL₅₀, EL50, IL50, : >10 <= 100 mg/l,

Acute toxicity - microorganisms EC₅₀, >: > 100 mg/l,

12.2. Persistence and degradability

Persistence and degradability The product is readily biodegradable. The product is degraded completely by photochemical oxidation.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Partition coefficient log Pow: 3.39

12.4. Mobility in soil

Mobility The product is insoluble in water and will spread on the water surface.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Do not puncture or incinerate, even when empty. Materials such as cleaning rags and paper wipes that are contaminated with flammable liquids may self-ignite after use and should be stored in designated fireproof containers with tight-fitting, self-closing lids. Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General Wear protective clothing as described in Section 8 of this safety data sheet.

14.1. UN number

UN No. (ADR/RID) 1265

UN No. (IMDG) 1265

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UN No. (ICAO) 1265

UN No. (ADN) 1265

14.2. UN proper shipping name

Proper shipping name (ADR/RID) PENTANES

Proper shipping name (IMDG) PENTANES (PENTANE)

Proper shipping name (ICAO) PENTANES

Proper shipping name (ADN) PENTANES

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 I

IMDG packing group I

ADN packing group I

ICAO packing group I

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-E, S-D

ADR transport category 1

Emergency Action Code 3YE

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

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

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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

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

This product may impact SEVESO storage regulations.

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

16/08/2016

Revision

06

Supersedes date

14/04/2016

SDS number

354

Version number

1.001

SDS status

Approved.

Signature

Lisa Bland

PENTANE

Risk phrases in full

R12 Extremely flammable.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: may cause lung damage if swallowed.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

Hazard statements in full

H224 Extremely flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.