

**SAFETY DATA SHEET**

Version: 13

Date of issue: 14/09/2021

**HEXANE****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Product code : 32204  
 Product name : HEXANE  
 Index number : 649-328-00-1  
 EC number : 925-292-5 (Provisional.)

**REACH Registration number**

Registration number	Legal entity
01-2119474209-33-0004	CEPSA S. A.

CAS number : 64742-49-0  
 Product type : Liquid.  
 Other means of identification / Product description : HEXANES

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

Identified uses
Distribution of substance - Industrial
Formulation and (re)packing of substances and mixtures - Industrial
Manufacture of substance -Industrial
Use in agrochemicals - Professional
Use in cleaning agents - Consumer
Use in cleaning agents - Industrial
Use in cleaning agents - Professional
Use in laboratories - Industrial
Use in laboratories - Professional
Use in Lubricants. - Industrial
Uses Use in polymer processing - Industrial
Uses Blowing agent. - Industrial
Use in coatings - Industrial
Use in coatings - Professional
Uses Mining industry - Industrial

**1.3 Details of the supplier of the safety data sheet**

Supplier/Manufacturer, Distributor or Importer : CEPSA U. K. LTD.  
 Audrey House  
 16 - 20 Ely Place  
 London EC1N 6SN - United Kingdom

Email : sales@cepsa.com  
 productstewardship@cepsa.com

Telephone number : +44 0207 831 2788

Hours of operation : 24/7

**1.4 Emergency telephone number****Supplier/Manufacturer, Distributor or Importer**

Telephone number : +44 1865 407333 (Europe, English) +44 1235 239670 (Europe, multiple Languages)

+34 91 114 2520 (Spain) +33 1 72 11 00 03 (France)  
 +351 30880 4750 (Portugal) +49 89 220 61012 (Germany)  
 0800 000 7801 (Germany) +30 21 1198 3182 (Greece)  
 +46 8 566 42573 (Sweden) +47 2103 4452 (Norway)  
 +45 8988 2286 (Denmark) +358 9 7479 0199 (Finland)  
 +39 02 3604 2884 (Italy) +48 22 307 3690 (Poland)  
 +31 10 713 8195 (Netherlands) +420 228 882 830 (Czechoslovakia)

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+90 212 375 5231 (Turkey)

+1 866 928 0789, +1 215 207 0061 +1 202 464 2554 (United States and Canada)

+52 55 5004 8763 (Mexico) +55 11 3197 5891 (Brazil) +56 2 2582 9336 (Chile)

+44 1235 239671 (Middle East/Africa) +973 1619 8321 (Middle East/Bahrein)  
+27 21 300 2732 (Africa/South Africa) 007 803 011 0293 (Asia East/South East)

+65 3158 1074 (Indonesia) 001 800 120 666 751 (Thailandia)  
+63 2 8231 2149 (Philippines) +60 3 6207 4347 (Malasia)  
+86 512 8090 3042 (China and Taiwan) +886 2 8793 3212 (Taiwan)  
+86 532 8388 9090 (China Mainland) +91 11 6641 1405 (India)  
+65 3158 1329 (Pakistan) +65 3158 1195 (Sri Lanka)  
+65 3158 1285 (Korea) +82 2 3479 8401 (South Korea)  
+84 8 4458 2388 (Vietnam) +81 3 4578 9341 (Japan)  
+61 2 8014 4558 (Australia) +64 9 929 1483 (New Zealand)

Hours of operation : 24/7

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : UVCB

**Classification according to** : Flam. Liq. 2, H225  
**Regulation (EC) No.** Skin Irrit. 2, H315  
**1272/2008 [CLP/GHS]** Repr. 2, H361f (Fertility) (inhalation)  
STOT SE 3, H336  
STOT RE 2, H373 (central nervous system (CNS)) (inhalation)  
Asp. Tox. 1, H304  
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : H225 - Highly flammable liquid and vapour.  
H315 - Causes skin irritation.  
H361f - Suspected of damaging fertility if inhaled.  
H304 - May be fatal if swallowed and enters airways.  
H336 - May cause drowsiness or dizziness.  
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled. (central nervous system (CNS))  
H411 - Toxic to aquatic life with long lasting effects.

### Precautionary statements

**General** : P103 - Read label before use.  
P102 - Keep out of reach of children.  
P101 - If medical advice is needed, have product container or label at hand.

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<b>Prevention</b>	: P201 - Obtain special instructions before use. P280 - Wear protective gloves. Wear protective clothing: Recommended: Use suitable protective equipment. PVA gloves. Viton® ,nitrile rubber or polyethylene (PE). Wear eye or face protection: Recommended: Tightly-fitting goggles. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment. P260 - Do not breathe vapour.
<b>Response</b>	: P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
<b>Storage</b>	: P405 - Store locked up.
<b>Disposal</b>	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	: Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich
<b>Supplemental label elements</b>	: Not applicable.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: Not applicable.
<b><u>Special packaging requirements</u></b>	
<b>Containers to be fitted with child-resistant fastenings</b>	: Yes, applicable.
<b>Tactile warning of danger</b>	: Yes, applicable.

### 2.3 Other hazards

<b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	: PBT	P	B	T	vPvB	vP	vB
	No	N/A	No	Yes	No	N/A	No

**Other hazards which do not result in classification** : None known.

## SECTION 3: Composition/information on ingredients

**3.1 Substances** : UVCB  
**Product description** : HEXANES

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	REACH #: 01-2119474209-33 EC: 925-292-5 CAS: 64742-49-0 Index: 649-328-00-1	100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f (Fertility) (inhalation) STOT SE 3, H336 STOT RE 2, H373 (central nervous system (CNS)) (inhalation)	[A]

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Asp. Tox. 1, H304 Aquatic Chronic 2, H411
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See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

### Type

- [\*] Substance
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

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- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray, foam, dry chemical or CO<sub>2</sub>.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : No specific data.

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Firefighting measures** : In use, may form flammable/explosive vapour-air mixture. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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**6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### Seveso Directive - Reporting thresholds

#### Named substances

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Name	Notification and MAPP threshold	Safety report threshold
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2500 tonne	25000 tonne

## 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

## 8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	DNEL	Long term Inhalation	3,25 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	25,9 mg/kg bw/day	Workers	Systemic

PNECs

No PNECs available

## 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

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- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: Tightly-fitting goggles
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods. Recommended: Use suitable protective equipment. PVA gloves. Viton® , nitrile rubber or polyethylene (PE)
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Suitable protective footwear.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: If operating conditions cause high vapour concentrations or the TLV is exceeded, use supplied-air respirator.
- Environmental exposure controls** : 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

- Physical state** : Liquid.
- Colour** : Colourless.
- Odour** : Characteristic. [Strong]
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : <-20°C
- Initial boiling point and boiling range** : 62,5 to 70°C
- Flash point** : Closed cup: -20°C
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.

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Upper/lower flammability or explosive limits	: Lower: 1,2% Upper: 8,3%
Vapour pressure	: 19 to 50 kPa [room temperature]
Vapour density	: Not available.
Density	: 0,665 to 0,673 g/cm <sup>3</sup> [15°C (59°F)]
Relative density	: Not available.
Solubility(ies)	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/ water	: 2,2 to 5,2
Auto-ignition temperature	: >200°C
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): 0,004 to 0,007 cm <sup>2</sup> /s
Explosive properties	: Not available.
Oxidising properties	: Not available.

### 9.2 Other information

Solubility in water	: 0,06 g/l
Molecular weight	: 85,2 g/mole

## SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
10.5 Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	LC50 Inhalation Vapour	Rat	259354 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	3350 mg/kg	-
	LD50 Oral	Rat	16750 mg/kg	-

**Conclusion/Summary** : Not available.

#### Acute toxicity estimates

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Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	16750	3350	N/A	259,354	N/A

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	Skin - Oedema	Rabbit	0	-	-
	Skin - Erythema/Eschar	Rabbit	0,8	-	-
	Eyes - Oedema of the conjunctivae	Rabbit	0,33	-	-
	Eyes - Redness of the conjunctivae	Rabbit	0	-	-
	Eyes - Iris lesion	Rabbit	0	-	-

**Conclusion/Summary**

- Skin** : Based on available data, the classification criteria are not met.
- Eyes** : Based on available data, the classification criteria are not met.
- Respiratory** : No known significant effects or critical hazards.

**Sensitisation**

Product/ingredient name	Route of exposure	Species	Result
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	skin	Mouse	Not sensitizing

**Conclusion/Summary**

- Skin** : Not classified.
- Respiratory** : No known significant effects or critical hazards.

**Mutagenicity**

Product/ingredient name	Test	Experiment	Result
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	-	Experiment: In vitro Subject: Bacteria	Negative
	-	Experiment: In vitro Subject: Mammalian-Animal	Negative

- Conclusion/Summary** : Not mutagenic in a standard battery of genetic toxicological tests.

**Carcinogenicity**

- Conclusion/Summary** : Not available.

**Reproductive toxicity**

- Conclusion/Summary** : Reproductive toxin Reproductive toxicant - male

**Teratogenicity**

- Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Product/ingredient name	Category	Route of exposure	Target organs
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	Category 3	Not applicable.	Narcotic effects

**Specific target organ toxicity (repeated exposure)**

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Product/ingredient name	Category	Route of exposure	Target organs
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	Category 2	Inhalation	central nervous system (CNS)

**Aspiration hazard**

Product/ingredient name	Result
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	ASPIRATION HAZARD - Category 1

**Information on likely routes of exposure** : Not available.

**Potential acute health effects**

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

**Symptoms related to the physical, chemical and toxicological characteristics**

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Ingestion** : Adverse symptoms may include the following:  
nausea or vomiting

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Short term exposure**

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

**Long term exposure**

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

**Potential chronic health effects**

Product/ingredient name	Result	Species	Dose	Exposure
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	Sub-chronic NOAEL Inhalation Vapour	Rat	31652 mg/m <sup>3</sup>	90 days

- Conclusion/Summary** : Not available.
- General** : May cause damage to organs through prolonged or repeated exposure if inhaled.

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<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: Suspected of damaging fertility if inhaled.
<b>Metabolism</b>	: Metabolite is more toxic than the parent material. (Hexane-2,5-dione)
<b>Other information</b>	: Not available.

## SECTION 12: Ecological information

## 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	Acute EC50 23,35 mg/l	Crustaceans	48 hours
	Acute LC50 13,37 mg/l	Fish	96 hours
	Acute NOEC 2,992 mg/l	Fish	28 days
	Chronic NOEC 5,24 mg/l	Crustaceans	21 days

**Conclusion/Summary** : Not available.

## 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	301F Ready Biodegradability - Manometric Respirometry Test	98 % - Readily - 28 days	-	-

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	-	-	Readily

## 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	2.2 to 5.2	10 to 2500	high

## 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

## 12.5 Results of PBT and vPvB assessment

## HEXANE

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Hydrocarbons, C6, n-alkanes, iso-alkanes, cyclics, n-hexane rich	No	N/A	No	Yes	No	N/A	No

**12.6 Other adverse effects** : No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	UN1208	UN1208	UN1208	UN1208
<b>14.2 UN proper shipping name</b>	HEXANES	HEXANES	HEXANES	Hexanes
<b>14.3 Transport hazard class(es)</b>	3  	3  	3  	3 
<b>14.4 Packing group</b>	II	II	II	II
<b>14.5 Environmental hazards</b>	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

### Additional information

## HEXANE

<b>ADR/RID</b>	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Hazard identification number</b> 33 <b>Limited quantity</b> 1 L <b>Tunnel code</b> (D/E)
<b>ADN</b>	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
<b>IMDG</b>	: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-D
<b>IATA</b>	: The environmentally hazardous substance mark may appear if required by other transportation regulations. <b>Quantity limitation</b> Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.

**14.6 Special precautions for user** : **Transport within user's premises:** 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.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

<b>Proper shipping name</b>	: Hexane (all isomers)
<b>Ship type</b>	: 2
<b>Pollution category</b>	: Y
<b>Remarks</b>	: Not available.

## SECTION 15: Regulatory information

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

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

#### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

#### Ozone depleting substances (1005/2009/EU)

Not listed.

#### Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

#### Substances that may be used as drug precursors according to Regulations (EC) 273/2004 and 111/2005.

## HEXANE

Ingredient name	Annex	Status
Not listed.		

**Seveso Directive**

This product is controlled under the Seveso Directive.

**Named substances**

Name
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

**International regulations****Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

**Montreal Protocol (Annexes A, B, C, E)**

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**Inventory list**

Result of all inventory lists

Australia inventory (AICS) - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed

Canada inventory - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed on DSL

China inventory (IECSC) - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed

Europe inventory - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed in EINECS

Japan inventory (ENCS) - Not determined.

PETROSOL D HEXANO [100%]

Status entered: (no data entered)

Not determined is assumed for an ingredient without composition and without entered inventory status

Japan inventory (ISHL) - Not determined.

PETROSOL D HEXANO [100%]

Status entered: (no data entered)

Not determined is assumed for an ingredient without composition and without entered inventory status

Korea inventory - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed [Korea inventory (KECI)]

Mexico inventory - This material is listed or exempted.

PETROSOL D HEXANO [100%]

Status entered: Listed

New Zealand Inventory of Chemicals (NZIoC) - This material is listed or exempted.

PETROSOL D HEXANO [100%]

## HEXANE

Status entered: Listed  
 Philippines inventory (PICCS) - This material is listed or exempted.  
 PETROSOL D HEXANO [100%]  
 Status entered: Listed  
 Thailand inventory - Not determined.  
 PETROSOL D HEXANO [100%]  
 Status entered: (no data entered)  
 Not determined is assumed for an ingredient without composition and without entered inventory status  
 Turkey inventory - This material is listed or exempted.  
 PETROSOL D HEXANO [100%]  
 Status entered: Listed  
 Taiwan Chemical Substances Inventory (TCSI) - This material is listed or exempted.  
 PETROSOL D HEXANO [100%]  
 Status entered: Listed  
 United States inventory (TSCA 8b) - This material is listed or exempted.  
 'Listed' status taken into account. 'Active' and 'Inactive' statuses will be treated as 'Listed', and no distinction will be done between them  
 PETROSOL D HEXANO [100%]  
 Status entered: Active  
 New entry Active considered as 'Listed'  
 Vietnam inventory - This material is listed or exempted.  
 PETROSOL D HEXANO [100%]  
 Status entered: Listed

**15.2 Chemical safety assessment** : Complete.

### SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

#### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 2, H225	On basis of test data
Skin Irrit. 2, H315	Expert judgment
Repr. 2, H361f (Fertility) (inhalation)	Expert judgment
STOT SE 3, H336	Expert judgment
STOT RE 2, H373 (central nervous system (CNS)) (inhalation)	Expert judgment
Asp. Tox. 1, H304	Expert judgment
Aquatic Chronic 2, H411	Expert judgment

#### Full text of abbreviated H statements



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## HEXANE

H225 H304 H315 H336 H361f (inhalation) H373 (inhalation)	Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. Suspected of damaging fertility if inhaled. May cause damage to organs through prolonged or repeated exposure if inhaled.
H411	Toxic to aquatic life with long lasting effects.

### Full text of classifications [CLP/GHS]

Aquatic Chronic 2, H411 Asp. Tox. 1, H304 Flam. Liq. 2, H225 Repr. 2, H361f (inhalation) Skin Irrit. 2, H315 STOT RE 2, H373 (inhalation)	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 REPRODUCTIVE TOXICITY (Fertility) (inhalation) - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (inhalation) - Category 2
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3

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<b>Remarks:</b>	: <b>For maritime transport, the Safety Data Sheet does not need to include the Annex with the Exposure Scenarios that begins in the next page. The total number of pages indicated takes into account this Annex.</b>

### Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

## Annex to the extended Safety Data Sheet (eSDS)

Consumer

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Cleaning Agent - Consumer

List of use descriptors : **Identified use name:** Use in cleaning agents - Consumer  
**Substance supplied to that use in form of:** As such  
**Sector of end use:** SU21  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC08a, ERC08d, ESVOC SpERC 8.4c.v1  
**Market sector by type of chemical product:** PC03, PC04, PC08, PC09a, PC09b, PC09c, PC24, PC35, PC38

Environmental contributing scenarios : **Use in cleaning agents**

Health Contributing scenarios : **Use in cleaning agents**

Processes and activities covered by the exposure scenario : Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air-care products.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in cleaning agents

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 110  
Fraction of Regional tonnage used locally 0.0005  
Annual site tonnage 0.056  
Maximum daily site tonnage 0.15

Frequency and duration of use : Emission days 365 - Continuous release

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.95  
Release fraction to wastewater from process (initial release prior to RMM) 0.025  
Release fraction to soil from process (initial release prior to RMM) 0.025

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via on-site sewage treatment 96  
Maximum allowable site tonnage ( $M_{safe}$ ) based on release following total wastewater treatment removal 1400  
Assumed on-site sewage treatment plant flow 2000

Conditions and measures related to external treatment of waste for disposal : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste : External recovery and recycling of waste should comply with applicable local and/or national regulations.

**Contributing scenario controlling consumer exposure for 1: Use in cleaning agents**

<b>Concentration of substance in mixture or article</b>	: Unless otherwise stated. Covers concentrations up to 100%
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa - Vapour pressure (Pa) 30000
<b>Amounts used</b>	: Unless otherwise stated. Covers use up to 13800 g. Covers skin contact area up to 857.5 cm <sup>2</sup>
<b>Frequency and duration of use</b>	: Unless otherwise stated. Covers use up to 365 days./Year - Unless otherwise stated. Covers use up to 4 application per day - Covers exposure up to 8h/per task:
<b>Other given operational conditions affecting consumers exposure</b>	: Unless otherwise stated. Assumes activities are at ambient temperature (unless stated differently). - Covers use in room size of 20m <sup>3</sup> - Use with adequate ventilation.

**Product category(ies) - Operational conditions and risk management measures****Air care, instant action (aerosol sprays)**

Unless otherwise stated, Covers concentrations up to 50% - Covers use up to 365 days/year - Covers exposure up to 4 application per day - For each use event, covers use amounts up to 0.1 g. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.25 hr/per task: - Covers use under typical household ventilation. - No specific risk management measure identified beyond those operational conditions stated.

**Air care, instant action (aerosol sprays) - Pesticide. - Excipient only**

Unless otherwise stated. Covers concentrations up to 50% - Covers use up to 365 days/year - Covers use up to 4 application per day - For each use event, covers use amounts up to 5 g. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.25 h/per task: - Covers use under typical household ventilation. - No specific risk management measure identified beyond those operational conditions stated.

**Air care, continuous action (solid and liquid)**

Unless otherwise stated, Covers concentrations up to 10 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 35.7 cm<sup>2</sup> - For each use event, covers use amounts up to 0.48 g. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 8hr/per task: - Covers use under typical household ventilation. - No specific risk management measure identified beyond those operational conditions stated.

**Air care, continuous action (solid and liquid) - Pesticide. - Excipient only**

Unless otherwise stated, Covers concentrations up to 50% - Covers use up to 365 days./Year - Covers use up to 1 application per day - Covers skin contact area up to 35.7 cm<sup>2</sup> - For each use event, covers use amounts up to 0.48g - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - Covers exposure up to 8 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

**Anti-freezing agents - Washing car window**

Unless otherwise stated. Covers concentrations up to 1 % - Covers use up to 365 days/year - Covers use up to 1 application per day - For each use event, covers use amounts up to 0.5 g. - Covers use in room size of 34 m<sup>2</sup> - For each use event, covers use amounts up to 0.02 hr/Single event. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - No specific risk management measure identified beyond those operational conditions stated.

**Welding and soldering agents,Fluxing agents**

Unless otherwise stated.Covers concentrations up to 20 % - Covers use up to 365 days/year - Covers use up to 1 application per day - For each use event, covers use amounts up to 12 g. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 1 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

**Anti-freeze and de-icing products Pouring into radiator**

Covers concentrations up to 10 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428 cm<sup>2</sup> - For each use event, covers use amounts up to 2000 g. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - For each use event, covers use amounts up to 0.17 hr/per task: - No specific risk management measure identified beyond those operational conditions

stated.

Anti-freeze and de-icing products - Lock de-icer

Unless otherwise stated. Covers concentrations up to 50 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 214 cm<sup>2</sup> - For each use event, covers use amounts up to 4 g. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - Covers use in room size of 34 m<sup>3</sup> - For each use event, covers use amounts up to 0.25 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Biocidal products - Laundry and dish-washing products

Covers concentrations up to Unless otherwise stated. 5 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 857.50 cm<sup>2</sup> - For each use event, covers use amounts up to 15 g. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.5 hr/per task: - Covers use under typical household ventilation. - No specific risk management measure identified beyond those operational conditions stated.

Biocidal products - Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Unless otherwise stated, Covers concentrations up to 5 % - Covers use up to 128 days/year - Covers use up to 1 application per day - Covers skin contact area up to 857.50 cm<sup>2</sup> - For each use event, covers use amounts up to 27 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.33 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Biocidal products - Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Unless otherwise stated, Covers concentrations up to 15 % - Covers use up to 128 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428.00 cm<sup>2</sup> - For each use event, covers use amounts up to 35 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.17 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers - Water-borne latex wall paint

Covers concentrations up to Unless otherwise stated. 1.5 % - Covers use up to 4 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428.75 cm<sup>2</sup> - For each use event, covers use amounts up to 2760 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - Covers exposure up to 2.20 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers - Solvent-rich, high-solid, water-borne paint

Unless otherwise stated. Covers concentrations up to 27.5 % - Covers use up to 6 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428.75 cm<sup>2</sup> - Covers use up to 744 g. - Covers use in room size of 20m<sup>3</sup> - Covers use under typical household ventilation. - For each use event, covers use amounts up to 2.2 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers - Aerosol spray can

Unless otherwise stated. Covers exposure up to 50 % - Covers use up to 2 days/year - Covers use up to 1 application per day - Covers use up to 215 g. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - Covers use in room size of 34 m<sup>3</sup> - For each use event, covers use amounts up to 0.33 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Coatings and paints, thinners, paint removers - Removers (paint-, glue-, wall paper-, sealant-remover)

Unless otherwise stated. Covers concentrations up to 50 % - Covers use up to 3 days/year - Covers use up to 1 application per day - Covers skin contact area up to 857.50 cm<sup>2</sup> - For each use event, covers use amounts up to 491 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 2.00 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Fillers, putties, plasters, modelling clay - Fillers and putty

Unless otherwise stated, Covers concentrations up to 2 % - Covers use up to 12 days/year - Covers use up to 1 application per day - Covers skin contact area up to

35.73 cm<sup>2</sup> - For each use event, covers use amounts up to 85 g. - Covers use in room size of 20m<sup>3</sup> - Covers use under typical household ventilation. - For each use event, covers use amounts up to 4.00 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Fillers, putties, plasters, modelling clay - Plasters and floor equalisers  
Unless otherwise stated, Covers concentrations up to 2% Covers use up to 12 days/year - Covers use up to 1 application per day - Covers skin contact area up to 857.50 cm<sup>2</sup> - For each use event, covers use amounts up to 13800 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 2.00 hr/per task: - Operational conditions and risk management measures  
Avoid using at a product concentration greater than 1.2%. Avoid using when windows closed.

Fillers, putties, plasters, modelling clay - Modelling clay  
Unless otherwise stated, Covers concentrations up to 1 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 254.4 cm<sup>2</sup> - For each use event, assumes swallowed amount of 1g. - No specific risk management measure identified beyond those operational conditions stated.

Finger paints  
Unless otherwise stated, Covers concentrations up to 50 % - Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 254.40 cm<sup>2</sup> - For each use event, assumes swallowed amount of 1.35 g. - Avoid using at a product concentration greater than 1.25 %

Cleaning and Washing operations. - Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)  
Unless otherwise stated, Covers concentrations up to 15 % - Covers use up to 128 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428 cm<sup>2</sup> - For each use event, covers use amounts up to 35 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.17hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Cleaning and Washing operations. - Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)  
Unless otherwise stated, Covers concentrations up to 5 % - Covers use up to 128 days/year - Covers use up to 1 application per day - Covers skin contact area up to 457.5 cm<sup>2</sup> - For each use event, covers use amounts up to 27 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.33 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Cleaning and Washing operations. - Laundry and dish-washing products  
Unless otherwise stated, Covers concentrations up to 5 % Covers use up to 365 days/year - Covers use up to 1 application per day - Covers skin contact area up to 857.5 cm<sup>2</sup> - For each use event, covers use amounts up to 15 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each use event, covers use amounts up to 0.5 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products - Liquids  
Unless otherwise stated, Covers concentrations up to 100 % - Covers use up to 4 days/year - Covers use up to 1 application per day - Covers skin contact area up to 468.00 cm<sup>2</sup> - For each use event, covers use amounts up to 2200 g. - Covers use in a one car garage (34 m<sup>3</sup>) under typical ventilation. - Covers use in room size of 34 m<sup>3</sup> - For each use event, covers use amounts up to 0.17 h/per task: - No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products - Pastes  
Unless otherwise stated, Covers concentrations up to 20 % - Covers use up to 10 days/year - Covers use up to 1 application per day - Covers skin contact area up to 468.00 cm<sup>2</sup> - For each use event, covers use amounts up to 34 g. - No specific risk management measure identified beyond those operational conditions stated.

Lubricants, greases, release products Sprays  
Unless otherwise stated, Covers concentrations up to 50 % - Covers use up to 6 days/year - Covers use up to 1 application per day - Covers skin contact area up to 428.75 cm<sup>2</sup> - For each use event, covers use amounts up to 73 g. - Covers use under typical household ventilation. - Covers use in room size of 20m<sup>3</sup> - For each

use event, covers use amounts up to 0.17 hr/per task: - No specific risk management measure identified beyond those operational conditions stated.

Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in cleaning agents

Exposure assessment (environment): : Not available.

Exposure estimation and reference to its source : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Consumers: 0: Use in cleaning agents

Exposure assessment (human): : Not available.

Exposure estimation and reference to its source : ECETOC TRA consumer v3

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. - Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

Environment : Not available.

Health : Not available.

**HEXANE**

**[925-292-5] Use in Cleaning Agent - Consumer**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Distribution of the Substance - Industrial

List of use descriptors : **Identified use name:** Distribution of substance - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15  
**Sector of end use:** SU03, SU08, SU09  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC01, ERC02, ESVOC SpERC 1.1b.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Distribution of substance**

Health Contributing scenarios : **Distribution of substance**

Processes and activities covered by the exposure scenario : Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Distribution of substance

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 600  
Fraction of Regional tonnage used locally 0.002  
Annual site tonnage 1.2  
Maximum daily site tonnage 60

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.001  
Release fraction to wastewater from process (initial release prior to RMM) 0.00001  
Release fraction to soil from process (initial release prior to RMM) 0.00001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 90  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 710000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Distribution of substance

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

### Contributing scenarios - Operational conditions and risk management measures

General exposures (closed systems) Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No other specific measures identified.

General measures (skin irritants)  
Avoid direct contact with the substance/mixture/product by establishing organisational measures.

General exposures (closed systems) Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Ensure material transfers are under containment or extract ventilation.

General exposures (open systems)  
Ensure material transfers are under containment or extract ventilation.

Process sampling  
Ensure material transfers are under containment or extract ventilation.

Laboratory activities  
Handle in a fume cupboard or under extract ventilation.

Bulk transfers Closed systems  
Ensure material transfers are under containment or extract ventilation.

Bulk transfers Open systems  
Handle substance within a closed system.

Bulk transfers Open systems  
Wear a respirator conforming to EN140 with type A/P2 filter or better.

Drum and small package filling  
Fill containers/cans at dedicated fill points supplied with local extract ventilation. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Equipment cleaning and maintenance  
Provide enhanced general ventilation by mechanical means. - Transfer via enclosed lines. - Retain drain-downs in sealed storage pending disposal or for subsequent

recycle.

Material storage Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No specific measures identified.

Material storage Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Ensure material transfers are under containment or extract ventilation.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Distribution of substance

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Distribution of substance

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.  
- Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

**[925-292-5] Distribution of the Substance - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Formulation and (re)packing of substances and mixtures - Industrial

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15  
**Sector of end use:** SU10  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC02, ESVOC SpERC 2.2.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Formulation and (re)packing of substances and mixtures**

Health Contributing scenarios : **Formulation and (re)packing of substances and mixtures**

Processes and activities covered by the exposure scenario : Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

### Section 2 - Exposure controls

**Contributing scenario controlling environmental exposure for 0: Formulation and (re)packing of substances and mixtures**

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 310  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 310  
Maximum daily site tonnage 3100

Frequency and duration of use : Continuous release Emission days 100

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements) 0.025  
Release fraction to wastewater from process (initial release prior to RMM) 0.0002  
Release fraction to soil from process (initial release prior to RMM) 0.0001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 0  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 630000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Formulation and (re)packing of substances and mixtures

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

General exposures (closed systems) Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

No specific measures identified.

General exposures (closed systems)

Ensure material transfers are under containment or extract ventilation.

General exposures (open systems)

Provide extract ventilation to points where emissions occur.

Batch process, Elevated temperature. Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Ensure material transfers are under containment or extract ventilation.

Process sampling

Ensure material transfers are under containment or extract ventilation.

Laboratory activities

Handle in a fume cupboard or under extract ventilation.

Bulk transfers

Ensure material transfers are under containment or extract ventilation.

Mixing operations (open systems)

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Manual-Transfer from/pouring from containers

Provide extract ventilation to points where emissions occur. - Avoid carrying out activities involving exposure for more than 4 hours per day.

Drum/batch transfers

Provide extract ventilation to points where emissions occur.

Production of preparation or articles by tableting, compression, extrusion or pelletisation  
Handle substance within a predominantly closed system provided with extract ventilation. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Drum and small package filling  
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Equipment cleaning and maintenance  
Provide enhanced general ventilation by mechanical means. - Drain down system prior to equipment break-in or maintenance.

Material storage - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No specific measures identified.

Material storage - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Ensure material transfers are under containment or extract ventilation.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Formulation and (re)packing of substances and mixtures

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Formulation and (re)packing of substances and mixtures

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.  
- Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

***[925-292-5] Formulation and (re)packing of substances and mixtures -  
Industrial***

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Manufacture of Substance - Industrial

List of use descriptors : **Identified use name:** Manufacture of substance -Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15  
**Sector of end use:** SU03, SU08, SU09  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC01, ERC04, ESVOC SpERC 1.1.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Manufacture of substance**

Health Contributing scenarios : **Manufacture of substance**

Processes and activities covered by the exposure scenario : Manufacture of the substance or use as an intermediate or a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Manufacture of substance

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 18000  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 18000  
Maximum daily site tonnage 59000

Frequency and duration of use : Continuous release  
Emission days 300

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.05  
Release fraction to wastewater from process (initial release prior to RMM) 0.0003  
Release fraction to soil from process (initial release prior to RMM) 0.0001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 90  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 2100000 Assumed on-site sewage treatment plant flow 10000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: During manufacturing, no waste of the substance is generated.
<b>Conditions and measures related to external recovery of waste</b>	: During manufacturing, no waste of the substance is generated.

### Contributing scenario controlling worker exposure for 1: Manufacture of substance

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

### Contributing scenarios - Operational conditions and risk management measures

#### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

General exposures (closed systems) Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

No specific measures identified.

General exposures (closed systems) Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Handle substance within a closed system.

General exposures (closed systems) Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition  
Ensure material transfers are under containment or extract ventilation.

General exposures (open systems)  
Ensure material transfers are under containment or extract ventilation.

Process sampling  
Ensure material transfers are under containment or extract ventilation.

Laboratory activities  
Handle in a fume cupboard or under extract ventilation.

Bulk transfers Open systems  
Provide extract ventilation to points where emissions occur.

Bulk transfers Closed systems  
Ensure material transfers are under containment or extract ventilation.

Equipment cleaning and maintenance  
Provide enhanced general ventilation by mechanical means. - Drain down system prior to equipment break-in or maintenance.

Material storage Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

No other specific measures identified.

Material storage Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide extract ventilation to material transfer points and other openings.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Manufacture of substance

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Manufacture of substance

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterisation. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

**[925-292-5] Manufacture of Substance - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Agrochemicals - Professional

List of use descriptors : **Identified use name:** Use in agrochemicals - Professional  
**Process Category:** PROC01, PROC02, PROC04, PROC08a, PROC08b, PROC11, PROC13  
**Sector of end use:** SU22  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC08a, ERC08d  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in agrochemicals**

Health Contributing scenarios : **Use in agrochemicals**

Processes and activities covered by the exposure scenario : Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in agrochemicals

**Amounts used** : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 330  
Fraction of Regional tonnage used locally 0.002  
Annual site tonnage 0.657  
Maximum daily site tonnage 1.8

**Frequency and duration of use** : Continuous release  
Emission days 365

**Environment factors not influenced by risk management** : Local freshwater dilution factor 10  
Local marine water dilution factor 100

**Other conditions affecting environmental exposure** : Release fraction to air from process (initial release prior to RMM) 0.9  
Release fraction to wastewater from process (initial release prior to RMM) 0.01  
Release fraction to soil from process (initial release prior to RMM) 0.09

**Technical conditions and measures at process level (source) to prevent release** : Common practices vary across sites thus conservative process release estimates used.

**Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil** : Risk from environmental exposure is driven by freshwater.  
No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 0  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

**Organisational measures to prevent/limit release from site** : Do not apply industrial sludge to natural soils.  
Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 12000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in agrochemicals

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. Assumes a good basic standard of occupational hygiene is implemented

### Contributing scenarios - Operational conditions and risk management measures

#### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

#### Transfer from/pouring from containers

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

#### Mixing in containers

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

#### Spraying or fogging

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour. - Wear a full-face respirator conforming to EN136 with type A filter or better. - Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

#### Spraying/fogging by machine application

Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20 (professional use) - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

#### Ad hoc manual application via trigger sprays, dipping, etc.

Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

#### Clean-down and maintenance of equipment

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

#### Disposal. waste

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

Material storage - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No specific measures identified.

Material storage - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide extract ventilation to points where emissions occur.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in agrochemicals

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Use in agrochemicals

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.  
- Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

**[925-292-5] Use in Agrochemicals - Professional**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Cleaning Agent - Industrial

List of use descriptors : **Identified use name:** Use in cleaning agents - Industrial  
**Process Category:** PROC02, PROC03, PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC01  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04, ESVOC SpERC 4.4a.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in cleaning agents**

Health Contributing scenarios : **Use in cleaning agents**

Processes and activities covered by the exposure scenario : Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in cleaning agents

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 340  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 100  
Maximum daily site tonnage 5000

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 1.0  
Release fraction to wastewater from process (initial release prior to RMM) 0.000003  
Release fraction to soil from process (initial release prior to RMM) 0

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by soil. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 70  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via on-site sewage treatment 96  
Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal 4400000  
Assumed on-site sewage treatment plant flow 2000

<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in cleaning agents

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature.

#### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

Bulk transfers

Ensure material transfers are under containment or extract ventilation. - Avoid carrying out operation for more than 1 hour.

Bulk transfers

Ensure material transfers are under containment or extract ventilation. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Automatic processing with: (semi) Closed system - Use in contained systems

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Automatic processing with: (semi) Closed system - Use in contained systems

Wear a respirator conforming to EN140 with type A/P2 filter or better.

Automatic processing with: (semi) Closed system - Drum/batch transfers

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 1 hour.

Automatic processing with: (semi) Closed system - Drum/batch transfers

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Application of cleaning products in closed systems

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Application of cleaning products in closed systems

Wear a respirator conforming to EN140 with type A/P2 filter or better.

Filling of equipment from drums or containers

Ensure material transfers are under containment or extract ventilation. - Avoid carrying out operation for more than 1 hour.

Filling of equipment from drums or containers

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Use in contained batch processes

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 4 hours.

Use in contained batch processes

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Degreasing small objects in cleaning station

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 1 hour.

Degreasing small objects in cleaning station

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Cleaning with low-pressure washers

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour. - Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Cleaning with low-pressure washers

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Cleaning with high-pressure washers

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour. - Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Cleaning with high-pressure washers

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Manual Surfaces Cleaning

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour. - Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Manual Surfaces Cleaning

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

**Conditions and measures related to personal protection and hygiene**

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in cleaning agents

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Use in cleaning agents

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
<b>Health</b>	: Not available.

**HEXANE****[925-292-5] Use in Cleaning Agent - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Cleaning Agents - Professional

List of use descriptors : **Identified use name:** Use in cleaning agents - Professional  
**Process Category:** PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC01  
**Sector of end use:** SU22  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC08a, ERC08d, ESVOC SpERC 8.4b.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in cleaning agents**

Health Contributing scenarios : **Use in cleaning agents**

Processes and activities covered by the exposure scenario : Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in cleaning agents

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 220  
Fraction of Regional tonnage used locally 0.0005  
Annual site tonnage 0.11  
Maximum daily site tonnage 0.31

Frequency and duration of use : Continuous release - Emission days 365

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.02  
Release fraction to wastewater from process (initial release prior to RMM) 0.000001  
Release fraction to soil from process (initial release prior to RMM) 0

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of N/A  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 3800 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in cleaning agents

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

Filling of equipment from drums or containers

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

Filling of equipment from drums or containers

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Automatic processing with: (semi) Closed system - Use in contained systems

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Automatic processing with: (semi) Closed system - Use in contained systems

Provide enhanced general ventilation by mechanical means.

Automatic processing with: (semi) Closed system - Drum/batch transfers - Use in contained systems

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Automatic processing with: (semi) Closed system - Drum/batch transfers - Use in contained systems

Wear a respirator conforming to EN140 with type A/P2 filter or better.

Semi-automated process. (e.g. Semi-automatic application of floor care and maintenance products)

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

Semi-automated process. (e.g. Semi-automatic application of floor care and maintenance products)

Provide enhanced general ventilation by mechanical means. Wear a respirator conforming to EN140 with type A/P2 filter or better. -

Filling of equipment from drums or containers

Provide a good standard of general ventilation (not less than 3 to 5 air changes per

hour). - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

Filling of equipment from drums or containers

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Manual Surfaces Cleaning Dipping, immersion and pouring

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 1 hour. - Wear suitable gloves tested to EN374.

Manual Surfaces Cleaning

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better. - Wear suitable gloves tested to EN374.

Cleaning with low-pressure washers - Rolling, Brushing - No spraying

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour. - Wear suitable gloves tested to EN374.

Cleaning with low-pressure washers - Rolling, Brushing - No spraying

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours. - Wear a respirator conforming to EN140 with type A/P2 filter or better. - Wear suitable gloves tested to EN374.

Cleaning with high-pressure washers - Spraying - Indoor

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour. - Wear suitable gloves tested to EN374.

Cleaning with high-pressure washers - Spraying - Indoor

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 5%. - Wear a respirator conforming to EN140 with type A/P2 filter or better. - Wear suitable gloves tested to EN374.

Cleaning with high-pressure washers - Spraying Outdoor

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 1%. - Avoid carrying out operation for more than 1 hour. - Wear suitable gloves tested to EN374.

Cleaning with high-pressure washers - Spraying - Outdoor

Limit the substance content in the product to 5%. - Wear a full-face respirator conforming to EN136 with type A filter or better.

Manual Surfaces Cleaning Spraying

Ensure doors and windows are opened. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 4 hours. - Wear suitable gloves tested to EN374.

Manual Surfaces Cleaning

Ensure doors and windows are opened. - Wear a respirator conforming to EN140 with type A/P2 filter or better. - Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Avoid carrying out operation for more than 1 hour.

Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing

Provide extract ventilation to points where emissions occur. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour. - Wear suitable gloves tested to EN374.

Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing

Provide enhanced general ventilation by mechanical means. - Avoid carrying out

operation for more than 4 hours. - Wear a respirator conforming to EN140 with type A/P2 filter or better. - Wear suitable gloves tested to EN374.

Application of cleaning products in closed systems - Outdoor  
Ensure operation is undertaken outdoors. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

Application of cleaning products in closed systems - Outdoor  
Ensure operation is undertaken outdoors. - Avoid carrying out operation for more than 1 hour. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Cleaning of medical devices  
Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 1 hour.

Cleaning of medical devices  
Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

### Conditions and measures related to personal protection and hygiene

## Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

### Exposure estimation and reference to its source - Environment: 1: Use in cleaning agents

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

### Exposure estimation and reference to its source - Workers: 0: Use in cleaning agents

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk management measures are based on qualitative risk characterisation. Available hazard data do not support the need for a DNEL to be established for other health effects. Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.



## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Laboratories - Industrial

List of use descriptors : **Identified use name:** Use in laboratories - Industrial  
**Process Category:** PROC10, PROC15  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC02, ERC04  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in laboratories**

Health Contributing scenarios : **Use in laboratories**

Processes and activities covered by the exposure scenario : Use of the substance within laboratory settings, including material transfers and equipment cleaning

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in laboratories

**Amounts used** : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 0.1  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 0.1  
Maximum daily site tonnage 5

**Frequency and duration of use** : Continuous release  
Emission days 20

**Environment factors not influenced by risk management** : Local freshwater dilution factor 10  
Local marine water dilution factor 100

**Other conditions affecting environmental exposure** : Release fraction to air from process (initial release prior to RMM) 0.025  
Release fraction to wastewater from process (initial release prior to RMM) 0.02  
Release fraction to soil from process (initial release prior to RMM) 0.0001

**Technical conditions and measures at process level (source) to prevent release** : Common practices vary across sites thus conservative process release estimates used.

**Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil** : Risk from environmental exposure is driven by freshwater.  
No wastewater treatment required.  
Treat air emissions. 0  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

**Organisational measures to prevent/limit release from site** : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{safe}$ ) based on release following total wastewater treatment removal 6300 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

**Contributing scenario controlling worker exposure for 1: Use in laboratories**

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

**Contributing scenarios - Operational conditions and risk management measures**

General measures (skin irritants)  
Avoid direct contact with the substance/mixture/product by establishing organisational measures.

Laboratory activities  
Provide enhanced general ventilation by mechanical means.

Cleaning  
Handle in a fume cupboard or under extract ventilation. - Avoid carrying out operation for more than 4 hours. - Wear suitable gloves tested to EN374.

**Conditions and measures related to personal protection and hygiene****Section 3 - Exposure estimation and reference to its source**

**Website:** : Not applicable.

**Exposure estimation and reference to its source - Environment: 1: Use in laboratories**

<b>Exposure assessment (environment):</b>	: Not available.
<b>Exposure estimation and reference to its source</b>	: Hydrocarbon Block Method (Petrorisk)

**Exposure estimation and reference to its source - Workers: 0: Use in laboratories**

<b>Exposure assessment (human):</b>	: Not available.
<b>Exposure estimation and reference to its source</b>	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

**Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
<b>Health</b>	: Not available.

**HEXANE****[925-292-5] Use in Laboratories - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Laboratories - Professional

List of use descriptors : **Identified use name:** Use in laboratories - Professional  
**Process Category:** PROC10, PROC15  
**Substance supplied to that use in form of:** As such  
**Sector of end use:** SU22  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC08a, SVOC SpERC 8.17  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in laboratories**

Health Contributing scenarios : **Use in laboratories**

Processes and activities covered by the exposure scenario : Use of the substance within laboratory settings, including material transfers and equipment cleaning

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in laboratories

**Amounts used** : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 1  
Fraction of Regional tonnage used locally 0.0005  
Annual site tonnage 0.0005  
Maximum daily site tonnage 0.0014

**Frequency and duration of use** : Continuous release - Emission days 365

**Environment factors not influenced by risk management** : Local freshwater dilution factor 10  
Local marine water dilution factor 100

**Other conditions affecting environmental exposure** : Release fraction to air from process (initial release prior to RMM) 0.5  
Release fraction to wastewater from process (initial release prior to RMM) 0.5  
Release fraction to soil from process (initial release prior to RMM) 0

**Technical conditions and measures at process level (source) to prevent release** : Common practices vary across sites thus conservative process release estimates used.

**Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil** : Risk from environmental exposure is driven by freshwater.  
No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 0  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

**Organisational measures to prevent/limit release from site** : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{safe}$ ) based on release following total wastewater treatment removal 16 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

#### Contributing scenario controlling worker exposure for 1: Use in laboratories

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)  
Avoid direct contact with the substance/mixture/product by establishing organisational measures.

Laboratory activities  
Ensure doors and windows are opened.

Cleaning  
Handle in a fume cupboard or under extract ventilation. - Ensure doors and windows are opened. - Avoid carrying out operation for more than 4 hours.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in laboratories

<b>Exposure assessment (environment):</b>	: Not available.
<b>Exposure estimation and reference to its source</b>	: Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Use in laboratories

<b>Exposure assessment (human):</b>	: Not available.
<b>Exposure estimation and reference to its source</b>	: The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
<b>Health</b>	: Not available.

**HEXANE****[925-292-5] Use in Laboratories - Professional**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Lubricants - Industrial

List of use descriptors : **Identified use name:** Use in Lubricants. - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC17, PROC18  
**Substance supplied to that use in form of:** As such  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04, ERC07, ESVOC SpERC 4.6a.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in Lubricants.**

Health Contributing scenarios : **Use in Lubricants.**

Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in Lubricants.

Product characteristics : Substance is complex UVCB. - Predominantly hydrophobic

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 12  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 12  
Maximum daily site tonnage 600

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.01  
Release fraction to wastewater from process (initial release prior to RMM) 0.00003  
Release fraction to soil from process (initial release prior to RMM) 0.001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment.  
No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 70  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Prevent discharge of undissolved substance to or recover from onsite wastewater. -  
Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 4200000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in Lubricants.

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

##### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

General exposures (closed systems) - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Handle substance within a closed system.

General exposures (closed systems) - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions / Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Ensure material transfers are under containment or extract ventilation. - Handle substance within a closed system.

##### General exposures (open systems)

Ensure material transfers are under containment or extract ventilation.

##### Bulk transfers

Ensure material transfers are under containment or extract ventilation.

Filling of equipment from drums or containers - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Avoid carrying out operation for more than 1 hour. - Use drum pumps or carefully pour from container. - Wear suitable gloves tested to EN374.

Filling of equipment from drums or containers - Transfer of substance or mixture (charging and discharging) at dedicated facilities

Avoid carrying out operation for more than 1 hour. - Use drum pumps or carefully pour from container.

##### Initial factory fill of equipment

Ensure material transfers are under containment or extract ventilation. - Provide enhanced general ventilation by mechanical means.

Operation and lubrication of high energy open equipment - Lubrication at high energy conditions in metal working operations

Provide extract ventilation to points where emissions occur. - Restrict area of

openings to equipment.

Operation and lubrication of high energy open equipment - General greasing/lubrication at high kinetic energy conditions  
Provide extract ventilation to points where emissions occur. - Provide enhanced general ventilation by mechanical means.

Manual applications e.g. brushing, rolling  
Ensure material transfers are under containment or extract ventilation. - Provide enhanced general ventilation by mechanical means.

Treatment by dipping and pouring  
Provide enhanced general ventilation by mechanical means.

Spraying  
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide enhanced general ventilation by mechanical means.

Maintenance (of larger plant items) and machine set-up.  
No other specific measures identified.

Maintenance (of larger plant items) and machine set-up.  
Ensure material transfers are under containment or extract ventilation.

Maintenance (of larger plant items) and machine set-up. - Operation is carried out at elevated temperature (> 20°C above ambient temperature)  
Ensure material transfers are under containment or extract ventilation. - Provide enhanced general ventilation by mechanical means. - Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely.

Remanufacture of reject articles  
Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 5%.

Remanufacture of reject articles  
Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 1 hour.

Maintenance of small items  
Provide extract ventilation to points where emissions occur. - Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Material storage - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
Store substance within a closed system. - Transfer via enclosed lines.

Material storage - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide extract ventilation to points where emissions occur.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

**Exposure estimation and reference to its source - Environment: 0: Use in Lubricants.**

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

**Exposure estimation and reference to its source - Workers: 1: Use in Lubricants.**

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

**Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**Additional good practice advice beyond the REACH CSA**

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

**[925-292-5] Use in Lubricants - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Use in Polymer Processing - Industrial

List of use descriptors : **Identified use name:** Uses Use in polymer processing - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC08a, PROC08b, PROC09, PROC13, PROC14, PROC21  
**Substance supplied to that use in form of:** As such  
**Sector of end use:** SU03, SU10  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04, ERC07, ESVOC SpERC 4.21a  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : Use in polymer processing

Health Contributing scenarios : Use in polymer processing

Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in polymer processing

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 6.6  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 6.6  
Maximum daily site tonnage 330

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.75  
Release fraction to wastewater from process (initial release prior to RMM) 0  
Release fraction to soil from process (initial release prior to RMM) 0.00001

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater.  
No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 80  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 4100000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in polymer processing

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

Bulk transfers Closed systems - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No specific measures identified.

Bulk transfers Closed systems - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide enhanced general ventilation by mechanical means.

Bulk transfers - Transfer of substance or mixture (charging and discharging) at dedicated facilities  
Provide extract ventilation to material transfer points and other openings.

Bulk transfers - Transfer of substance or mixture (charging and discharging) at dedicated facilities  
Ensure material transfers are under containment or extract ventilation.

Bulk transfers - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)  
Ensure material transfers are under containment or extract ventilation. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Bulk weighing - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions  
No specific measures identified.

Bulk weighing - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide enhanced general ventilation by mechanical means.

Small scale weighing

Ensure material transfers are under containment or extract ventilation. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Additive premixing - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent

containment condition

Ensure material transfers are under containment or extract ventilation.

Additive premixing - Chemical production where opportunity for exposure arises  
Ensure material transfers are under containment or extract ventilation.

Additive premixing - Avoid carrying out operation for more than 4 hours.  
Ensure material transfers are under containment or extract ventilation. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Calendering (including Banburys) - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Production of articles by dipping and pouring

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Extrusion and masterbatching

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Injection moulding of articles

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Finishing operations

No specific measures identified.

Equipment maintenance

Provide enhanced general ventilation by mechanical means. - Drain down and flush system prior to equipment break-in or maintenance. - Wear suitable gloves tested to EN374.

Material storage - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

No specific measures identified.

Material storage - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  
Provide enhanced general ventilation by mechanical means.

### Conditions and measures related to personal protection and hygiene

## Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

### Exposure estimation and reference to its source - Environment: 1: Use in polymer processing

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

### Exposure estimation and reference to its source - Workers: 0: Use in polymer processing

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
<b>Health</b>	: Not available.

**HEXANE****[925-292-5] Use in Polymer Processing - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Uses as a Blowing Agent - Industrial

List of use descriptors : **Identified use name:** Uses Blowing agent. - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC08b, PROC09, PROC12  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in blowing agents**

Health Contributing scenarios : **Use in blowing agents**

Processes and activities covered by the exposure scenario : Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in blowing agents

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 47  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 47  
Maximum daily site tonnage 2300

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 1  
Release fraction to wastewater from process (initial release prior to RMM) 0.00003  
Release fraction to soil from process (initial release prior to RMM) 0

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 0  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 1300000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in blowing agents

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

##### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

##### Bulk transfers

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

##### Extrusion and expansion of polymer mass

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

##### Mixing operations

No specific measures identified.

##### Cutting and shaving

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

##### Collection and re-processing of shavings, cuttings, etc

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

##### Product packaging

Provide extract ventilation to points where emissions occur.

##### Material storage

Provide extract ventilation to points where emissions occur.

Mixing operations - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Provide extract ventilation to points where emissions occur.

Intermediate polymer storage - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Centrifuging including discharging - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Provide extract ventilation to points where emissions occur.

Drying and storage

Provide extract ventilation to points where emissions occur.

Semi-bulk packaging

Provide extract ventilation to points where emissions occur.

Treatment by heating - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Provide extract ventilation to points where emissions occur.

Article formation in mould - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Provide extract ventilation to points where emissions occur.

Cutting by heated wire - Manual

Provide extract ventilation to points where emissions occur.

Mixing operations

Provide extract ventilation to points where emissions occur.

Drum and small package filling - Filling of equipment from drums or containers

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Foaming

Provide extract ventilation to points where emissions occur.

Compression

Provide extract ventilation to points where emissions occur.

Cutting by heated wire

Provide extract ventilation to points where emissions occur.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in blowing agents

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Use in blowing agents

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
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### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
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<b>Health</b>	: Not available.
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<b>HEXANE</b>
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<b>[925-292-5] Uses as a Blowing Agent - Industrial</b>
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## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Uses in Coatings - Industrial

List of use descriptors : **Identified use name:** Use in coatings - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC13, PROC14, PROC15  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04, ESVOC SpERC 4.3a.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in coatings**

Health Contributing scenarios : **Use in coatings**

Processes and activities covered by the exposure scenario : Covers the use in coatings (paints, inks, adhesives, etc) within closed or contained systems including incidental exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application activities and film formation) and equipment cleaning, maintenance and associated laboratory activities.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in coatings

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 830  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 830  
Maximum daily site tonnage 2.1

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.98  
Release fraction to wastewater from process (initial release prior to RMM) 0.0007  
Release fraction to soil from process (initial release prior to RMM) 0

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment. - If discharging to municipal sewage treatment plant, no on-site wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 90  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 82.7  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 180000 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in coatings

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: liquid
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

##### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

##### General exposures (closed systems)

No other specific measures identified.

##### General exposures (closed systems) - With sample collection - Use in contained systems

Ensure material transfers are under containment or extract ventilation.

##### Film formation - force drying (50 - 100°C). Stoving (>100°C). UV/EB radiation curing - Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Ensure material transfers are under containment or extract ventilation.

##### Mixing operations - General exposures (closed systems)

Ensure material transfers are under containment or extract ventilation.

##### Film formation - air drying

Provide extract ventilation to points where emissions occur.

##### Preparation of material for application - Mixing operations (open systems)

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 4 hours.

##### Preparation of material for application - Mixing operations (open systems)

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

##### Spraying (automatic/robotic)

Carry out in a vented booth provided with laminar airflow. - Provide enhanced general ventilation by mechanical means.

##### Manual Spraying

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

##### Material transfers - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 4 hours.

Material transfers - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Provide extract ventilation to points where emissions occur. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Material transfers - Transfer of substance or mixture (charging and discharging) at dedicated facilities

Provide extract ventilation to points where emissions occur.

Roller, spreader, flow application

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Dipping, immersion and pouring

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Laboratory activities

Provide extract ventilation to points where emissions occur.

Material transfers Drum/batch transfers Transfer from/pouring from containers

Ensure transfer points are supplied with extract ventilation. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Material transfers Drum/batch transfers Transfer from/pouring from containers

Ensure transfer points are supplied with extract ventilation. - Avoid carrying out operation for more than 4 hours.

Production of preparation or articles by tableting, compression, extrusion or pelletisation

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 4 hours.

Production of preparation or articles by tableting, compression, extrusion or pelletisation

Provide extract ventilation to points where emissions occur. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

#### Conditions and measures related to personal protection and hygiene

### Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

#### Exposure estimation and reference to its source - Environment: 1: Use in coatings

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

#### Exposure estimation and reference to its source - Workers: 0: Use in coatings

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

### Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH CSA

<b>Environment</b>	: Not available.
<b>Health</b>	: Not available.

**HEXANE****[925-292-5] Uses in Coatings - Industrial**

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Uses in Coatings - Professional

List of use descriptors : **Identified use name:** Use in coatings - Professional  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19  
**Sector of end use:** SU22  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC08a, ERC08c, ERC08d, ERC08f, ESVOC SpERC 8.3b.v1  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Use in coatings**

Health Contributing scenarios : **Use in coatings**

Processes and activities covered by the exposure scenario : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Use in coatings

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 400  
Fraction of Regional tonnage used locally 0.0005  
Annual site tonnage 0.2  
Maximum daily site tonnage 0.55

Frequency and duration of use : Continuous release - Emission days 365

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.98  
Release fraction to wastewater from process (initial release prior to RMM) 0.01  
Release fraction to soil from process (initial release prior to RMM) 1

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by soil. - No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of N/A  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 0

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 96 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 4600 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Use in coatings

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: liquid
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

General exposures (closed systems)

No other specific measures identified.

Filling of equipment from drums or containers

Ensure material transfers are under containment or extract ventilation.

General exposures (closed systems) Use in contained systems

Ensure material transfers are under containment or extract ventilation.

Preparation of material for application

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. - Avoid carrying out activities involving exposure for more than 4 hours per day.

Preparation of material for application

Wear a respirator conforming to EN140 with type A/P2 filter or better.

Film formation - air drying - Outdoor

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 5%. - Avoid carrying out activities involving exposure for more than 1 hour per day.

Film formation - air drying - Outdoor

Ensure operation is undertaken outdoors. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Film formation - air drying - Indoor

Provide extract ventilation to points where emissions occur. - Provide enhanced general ventilation by mechanical means.

Film formation - air drying

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Preparation of material for application - Indoor

Provide enhanced general ventilation by mechanical means. - Wear a respirator

conforming to EN140 with type A/P2 filter or better.

Preparation of material for application - Indoor

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 1 hour.

Preparation of material for application - Outdoor

Ensure operation is undertaken outdoors. - Avoid carrying out operation for more than 4 hours. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Material transfers Drum/batch transfers

Handle substance within a closed system. - Provide enhanced general ventilation by mechanical means. - Avoid carrying out operation for more than 4 hours.

Material transfers - Drum/batch transfers

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Material transfers - Drum/batch transfers

Ensure transfer points are supplied with extract ventilation. - Avoid carrying out operation for more than 4 hours.

Roller, spreader, flow application - Indoor

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 1 hour.

Roller, spreader, flow application - Indoor

Provide enhanced general ventilation by mechanical means. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Roller, spreader, flow application - Outdoor

Ensure operation is undertaken outdoors. - Wear a full-face respirator conforming to EN136 with type A filter or better.

Manual Spraying - Indoor

Carry out in a vented booth - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 15 minutes.

Manual Spraying Indoor

Provide enhanced general ventilation by mechanical means. - Limit the substance content in the product to 25%. - Wear a full-face respirator conforming to EN136 with type A filter or better. - Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Manual Spraying - Outdoor

Ensure operation is undertaken outdoors. - Limit the substance content in the product to 1%. - Avoid carrying out operation for more than 15 minutes. - Wear suitable gloves tested to EN374.

Manual Spraying Outdoor

Ensure operation is undertaken outdoors. - Avoid carrying out operation for more than 1 hour. - Wear a full-face respirator conforming to EN136 with type A filter or better.

Dipping, immersion and pouring - Indoor

Provide extract ventilation to points where emissions occur. - Avoid carrying out operation for more than 15 minutes.

Dipping, immersion and pouring - Indoor

Provide extract ventilation to points where emissions occur. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Dipping, immersion and pouring - Outdoor

Ensure operation is undertaken outdoors. - Wear a full-face respirator conforming to EN136 with type A filter or better.

Laboratory activities

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Hand application - fingerpaints, pastels, adhesives - Indoor

Ensure doors and windows are opened. - Limit the substance content in the product to 25%. - Avoid carrying out operation for more than 15 minutes. - Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Hand application - fingerpaints, pastels, adhesives - Indoor  
Ensure doors and windows are opened. - Avoid carrying out operation for more than 4 hours. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

Hand application - fingerpaints, pastels, adhesives - Outdoor  
Ensure operation is undertaken outdoors. - Limit the substance content in the product to 5%. - Avoid carrying out operation for more than 15 minutes. - Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls.

Hand application - fingerpaints, pastels, adhesives - Outdoor  
Ensure operation is undertaken outdoors. - Avoid carrying out operation for more than 1 hour. - Wear a respirator conforming to EN140 with type A/P2 filter or better.

### Conditions and measures related to personal protection and hygiene

## Section 3 - Exposure estimation and reference to its source

**Website:** : Not applicable.

### Exposure estimation and reference to its source - Environment: 1: Use in coatings

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

### Exposure estimation and reference to its source - Workers: 0: Use in coatings

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Environment** : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.

**Health** : Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.  
- Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## Additional good practice advice beyond the REACH CSA

**Environment** : Not available.

**Health** : Not available.



## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

Product definition : UVCB  
Code : 32204  
Product name : HEXANE

### Section 1 - Title

Short title of the exposure scenario : [925-292-5] Uses in Mining Operation - Industrial

List of use descriptors : **Identified use name:** Uses Mining industry - Industrial  
**Process Category:** PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09  
**Substance supplied to that use in form of:** As such  
**Sector of end use:** SU03  
**Subsequent service life relevant for that use:** No.  
**Environmental Release Category:** ERC04, ERC07, SVOC SpERC 4.23  
**Market sector by type of chemical product:** Not applicable.  
**Article category related to subsequent service life:** Not applicable.

Environmental contributing scenarios : **Mining industry**

Health Contributing scenarios : **Mining industry**

Processes and activities covered by the exposure scenario : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

### Section 2 - Exposure controls

#### Contributing scenario controlling environmental exposure for 0: Mining industry

Amounts used : Fraction of EU tonnage used in region 0.1  
Regional use tonnage 47  
Fraction of Regional tonnage used locally 1  
Annual site tonnage 46  
Maximum daily site tonnage 2300

Frequency and duration of use : Continuous release - Emission days 20

Environment factors not influenced by risk management : Local freshwater dilution factor 10  
Local marine water dilution factor 100

Other conditions affecting environmental exposure : Release fraction to air from process (initial release prior to RMM) 0.25  
Release fraction to wastewater from process (initial release prior to RMM) 0.5  
Release fraction to soil from process (initial release prior to RMM) 0.05

Technical conditions and measures at process level (source) to prevent release : Common practices vary across sites thus conservative process release estimates used.

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil : Risk from environmental exposure is driven by freshwater sediment.  
No wastewater treatment required.  
Treat air emission to provide a typical removal efficiency of 80  
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$  (%): 99.6  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$  (%): 89.2

Organisational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils. - Sewage sludge should be incinerated, contained or reclaimed.

<b>Conditions and measures related to sewage treatment plant</b>	: Estimated substance removal from wastewater via on-site sewage treatment 96 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs 99.5 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal 2300 Assumed on-site sewage treatment plant flow 2000
<b>Conditions and measures related to external treatment of waste for disposal</b>	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
<b>Conditions and measures related to external recovery of waste</b>	: External recovery and recycling of waste should comply with applicable local and/or national regulations.

### Contributing scenario controlling worker exposure for 1: Mining industry

<b>Concentration of substance in mixture or article</b>	: Covers percentage substance in the product up to 100 %.
<b>Physical state</b>	: Liquid, vapour pressure > 10 kPa
<b>Amounts used</b>	: No Limit
<b>Frequency and duration of use</b>	: Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure</b>	: Assumes use at not more than 20°C above ambient temperature. - Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios - Operational conditions and risk management measures

##### General measures (skin irritants)

Avoid direct contact with the substance/mixture/product by establishing organisational measures.

##### Bulk transfers

Provide enhanced general ventilation by mechanical means.

##### Drum/batch transfers

Provide enhanced general ventilation by mechanical means.

##### Pouring from small containers

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

##### General exposures (closed systems)

Ensure material transfers are under containment or extract ventilation.

##### General exposures (open systems)

Provide extract ventilation to points where emissions occur. - Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

##### Phase separation Closed systems

Provide extract ventilation to points where emissions occur.

##### Ion exchange processes Closed systems

Provide enhanced general ventilation by mechanical means.

##### Process sampling

Ensure material transfers are under containment or extract ventilation.

##### Mixing operations

No specific measures identified.

##### Equipment cleaning and maintenance

Provide enhanced general ventilation by mechanical means. - Wear suitable gloves tested to EN374.

##### Material storage

No specific measures identified.

## Conditions and measures related to personal protection and hygiene

**Section 3 - Exposure estimation and reference to its source**

**Website:** : Not applicable.

**Exposure estimation and reference to its source - Environment: 1: Mining industry**

**Exposure assessment (environment):** : Not available.

**Exposure estimation and reference to its source** : Hydrocarbon Block Method (Petrorisk)

**Exposure estimation and reference to its source - Workers: 0: Mining industry**

**Exposure assessment (human):** : Not available.

**Exposure estimation and reference to its source** : The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

**Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

<b>Environment</b>	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SPERC factsheet.
<b>Health</b>	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. - Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. - Risk management measures are based on qualitative risk characterisation. - Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**Additional good practice advice beyond the REACH CSA**

**Environment** : Not available.

**Health** : Not available.

**HEXANE**

**[925-292-5] Uses in Mining Operation - Industrial**