



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 02.03.2020

Version number 1

Revision: 30.11.2019

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

- **1.1 Product identifier**
- **Trade name: ISA VERDÜNNER 4**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC1 Adhesives, sealants
- **Application of the substance / the mixture**
Industrial cleaner
Thinner, Diluent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
H.B. Fuller, Isar-Rakoll, S.A.
Estrada Nacional 13
PT-4486-851 Mindelo - Vila do Conde
+351 229 288 200
EU-MSDS@hbfuller.com
- **Informing department:** Regulatory department
- **1.4 Emergency telephone number:**
NCEC emergency service
+44 (0) 1235 239 670 (24 hours)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
Flam. Liq. 2 H225 Highly flammable liquid and vapour.
Skin Irrit. 2 H315 Causes skin irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.
Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**
   
GHS02 GHS07 GHS08 GHS09
- **Signal word** Danger
- **Hazard-determining components of labelling:**
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane
Hydrocarbons, C6, isoalkanes, <5% n-hexane
- **Hazard statements**
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.

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*H304 May be fatal if swallowed and enters airways.**H411 Toxic to aquatic life with long lasting effects.***Precautionary statements***P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**P331 Do NOT induce vomiting.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**P362+P364 Take off contaminated clothing and wash it before reuse.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***2.3 Other hazards***In the event of a large-scale use of the product, ignition sources in the immediate proximity and in low-lying areas, such as welding equipment, bells, heating elements, refrigerators, storage heaters, etc. should be switched off! Erect warning signs warning of the hazardous risk of explosive atmosphere!***Results of PBT and vPvB assessment***• PBT: Not applicable.**• vPvB: Not applicable.*

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures**Description:***Solvent mixture.**Adhesive.***Dangerous components:**

EC number: 921-024-6 Reg.nr.: 01-2119475514-35-0000	Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane Consisting of: 110-82-7 cyclohexane (10%); 110-54-3 n-hexane (0-<5%) Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; STOT SE 3, H336	50-100%
CAS: 110-82-7 EINECS: 203-806-2 Reg.nr.: 01-2119486291-36-0000	cyclohexane Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; STOT SE 3, H336	5-10%
CAS: 110-54-3 EINECS: 203-777-6 Reg.nr.: 01-2119480412-44	n-hexane Flam. Liq. 2, H225; Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; STOT SE 3, H336	<5%

• Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures**General information***Instantly remove any clothing soiled by the product.**Take affected persons into the open air.**• After inhalation Supply fresh air; consult doctor in case of symptoms.***After skin contact***Instantly wash with water and soap and rinse thoroughly.*

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If skin irritation continues, consult a doctor.

- **After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

- **After swallowing** Do not induce vomiting; instantly call for medical help.

- **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

- **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

- **Suitable extinguishing agents**

*Use fire fighting measures that suit the environment.**Water haze**Foam**Fire-extinguishing powder**Carbon dioxide*

- **For safety reasons unsuitable extinguishing agents** *Water with a full water jet.*

- **5.2 Special hazards arising from the substance or mixture**

*Formation of toxic gases is possible during heating or in case of fire.**Can be released in case of fire**Carbon monoxide and carbon dioxide*

- **5.3 Advice for firefighters**

- **Protective equipment:** *Do not inhale explosion gases or combustion gases.*

- **Additional information**

*Cool endangered containers with water spray jet.**Collect contaminated fire fighting water separately. It must not enter drains.**Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.*

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

*Wear protective equipment. Keep unprotected persons away.**Ensure adequate ventilation**Keep away from ignition sources**Wear protective clothing.*

- **6.2 Environmental precautions:**

*Do not allow to enter drainage system, surface or ground water.**Inform respective authorities in case product reaches water or sewage system.*

- **6.3 Methods and material for containment and cleaning up:**

*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).**Ensure adequate ventilation.**Send for recovery or disposal in suitable containers.**Do not use tools that can cause ignition.*

- **6.4 Reference to other sections**

*See Section 7 for information on safe handling**See Section 8 for information on personal protection equipment.**See Section 13 for information on disposal.*

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of aerosols.
- Take note of emission threshold.
- Use solvent-proof equipment.
- Keep out of the reach of children.

Information about protection against explosions and fires:



Keep ignition sources away - Do not smoke.

- Protect against electrostatic charges.
- Highly volatile, flammable constituents are released during processing.
- Fumes can combine with air to form an explosive mixture.
- Flammable mixtures may be formed in empty containers.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Requirements to be met by storerooms and containers:** Provide solvent resistant, sealed floor.
- Information about storage in one common storage facility:** Store away from foodstuffs.

Further information about storage conditions:

- Protect from heat and direct sunlight.
- Store in cool, dry conditions in original sealed container

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical systems:** No further data; see item 7.

8.1 Control parameters

Components with limit values that require monitoring at the workplace:

110-82-7 cyclohexane

WEL	Short-term value: 1050 mg/m ³ , 300 ppm
	Long-term value: 350 mg/m ³ , 100 ppm

110-54-3 n-hexane

WEL	Long-term value: 72 mg/m ³ , 20 ppm
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DNELs

- 2-(2H-BENZOTRIAZOL-2-YL)-p-CRESOL (CAS 2440-22-4):
- worker: Long-term exposure- systemic effects, Inhalation: 1 mg/m³
- worker: Long-term exposure- systemic effects, dermal: 2.5 mg/kg

PNECs

- Cyclohexan CAS 110-82-7
- PNEC 2,99 mg/kg (Boden)
- 3,24 mg/l (Kläranlagen)
- 0,207 mg/l (Meerwasser)
- 3,627 mg/kg (Süßwassersediment)
- 0,207 mg/l (Süßwasser)
- 0,207 mg/l (sporadische Freisetzung)

- Additional information:** The lists that were valid during the compilation were used as basis.

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· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

The usual precautionary measures should be adhered to general rules for handling chemicals.

Keep away from foodstuffs, beverages and food.

Take off immediately all contaminated clothing

Wash hands during breaks and at the end of the work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Use breathing protection in case of insufficient ventilation.

· **Recommended filter device for short term use:** Combination filter A-P2

· **Protection of hands:**



Protective gloves.

Solvent resistant gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

Natural rubber, NR

Recommended thickness of the material: ≥ 0.65 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Butyl rubber, BR

· Penetration time of glove material

The information is based on literature data and information of glove manufacturers.

Value for the permeation: Level ≤ 4

· Eye protection:



Tightly sealed safety glasses.

· **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:

Fluid

Colour:

Colourless

· Odour:

Characteristic

· Odour threshold:

Not determined.

· pH-value:

Not determined.

· Change in condition

Melting point/freezing point:

Not determined

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Initial boiling point and boiling range: 94 °C (DIN 53171)	
· Flash point:	-10 °C (DIN 53213)
· Inflammability (solid, gaseous)	Not applicable.
· Decomposition temperature:	Not determined.
· Self-inflammability:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/steam mixtures is possible.
· Critical values for explosion:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not determined.
· Density at 20 °C	ca. 0.700 g/cm ³ (DIN 51757)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
· Solvent content:	
Organic solvents:	100.0 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with alcohols, amines, aqueous acids and alkalis
Develops readily flammable gases / fumes
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

Oral LD50 12,705 mg/kg (rat)

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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard**
May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Must be specially treated under adherence to official regulations.

· **European waste catalogue**

07 00 00	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 01 00	wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals
07 01 04*	other organic solvents, washing liquids and mother liquors

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number	UN1206
· ADR, IMDG, IATA	
· 14.2 UN proper shipping name	1206 HEPTANES, ENVIRONMENTALLY HAZARDOUS
· ADR	HAZARDOUS
· IMDG	HEPTANES, MARINE POLLUTANT
· IATA	HEPTANES
· 14.3 Transport hazard class(es)	
· ADR, IMDG	
	
	
· Class	3 Flammable liquids.
· Label	3
· IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group	II
· ADR, IMDG, IATA	
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: Hydrocarbons, C6-C7
· Marine pollutant:	Yes
· Special marking (ADR):	Symbol (fish and tree)
	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Kemler Number:	33
· EMS Number:	F-E, S-E
· Stowage Category	B
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml

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· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1206 HEPTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **National regulations**
- **Technical instructions (air):**

Class	Share in %
NK	50-100
- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **VOC (EU) %** 100.00 %
- **Code MAL** 5-3
- **VOC (EU)** 700.0 g/l
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 - H225 Highly flammable liquid and vapour.
 - H304 May be fatal if swallowed and enters airways.
 - H315 Causes skin irritation.
 - H336 May cause drowsiness or dizziness.
 - H361f Suspected of damaging fertility.
 - H373 May cause damage to organs through prolonged or repeated exposure.
 - H400 Very toxic to aquatic life.
 - H410 Very toxic to aquatic life with long lasting effects.
 - H411 Toxic to aquatic life with long lasting effects.
- **Department issuing data specification sheet:** Environment, Health & Safety Department
- **Contact:** EU-MSDS@hbfuller.com
- **Abbreviations and acronyms:**
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 2: Flammable liquids – Category 2
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Repr. 2: Reproductive toxicity – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Asp. Tox. 1: Aspiration hazard – Category 1
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· *** Data compared to the previous version altered.**

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Annex: Exposure scenario

- **Short title of the exposure scenario**

Cyclohexane

Industrial Use in rigid foams, coatings adhesives and sealants

- **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

- **Product category** PC1 Adhesives, sealants

- **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

- **Environmental release category** ERC3 Formulation into solid matrix

- **Notes** The product is intended for professional use.

- **Description of the activities / processes covered in the Exposure Scenario**

See Section 1 of the Safety Data Sheet

- **Conditions of use**

Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semibulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities. Assumes a good basic standard of occupational hygiene is implemented

- **Duration and frequency** 5 workdays/week.

- **Physical parameters**

The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.

- **Physical state** Fluid

- **Concentration of the substance in the mixture** Raw material.

- **Other operational conditions** Observe the normal safety regulations when handling chemicals

- **Other operational conditions affecting environmental exposure**

Observe section 6 of the Safety Data Sheet (Accidental release measures).

- **Other operational conditions affecting worker exposure** Avoid contact with the skin and eyes.

- **Other operational conditions affecting consumer exposure** No special measures required.

- **Risk management measures**

- **Worker protection**

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Technical protective measures** Ensure good ventilation/exhaustion at the workplace.

- **Personal protective measures**

The usual precautionary measures should be adhered to general rules for handling chemicals.

- **Environmental protection measures**

Avoid release to the environment. Obtain special instructions / refer to Safety Data Sheet.

- **Disposal measures**

Must not be disposed of with household waste. Do not allow to reach sewage system.

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- **Disposal procedures**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Waste type** *Partially emptied and uncleaned packaging*
- **Exposure estimation**
- **Consumer** *Not relevant for this Exposure Scenario.*

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