according to 1907/2006/EC, Article 31

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

- · 1.1 Product identifier
- · Trade name: Chlorobenzene, EssentQ®
- · Article number: CL0110
- · CAS Number:
- 108-90-7
- **EC number:** 203-628-5
- Index number: 602-033-00-1
- · Registration number 01-2119432722-45-XXXX
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- Product category PC21 Laboratory chemicals
- Process category

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

- PROC15 Use as laboratory reagent
- · Application of the substance / the preparation: Laboratory reagent
- · 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:

Scharlab, S.L. C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa 08181 Sentmenat (Barcelona) SPAIN Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65 email: scharlab@scharlab.com Internet Web Site: www.scharlab.com

Regional representation: Scharlab, S.L.
C/Gato Pérez, 33. Pol.Ind. Mas d'en Cisa 08181 Sentmenat (Barcelona) SPAIN
Tel: (+34) 93 745 64 00 - FAX: (+34) 93 715 27 65
email: scharlab@scharlab.com
Internet Web Site: www.scharlab.com

• Further information obtainable from: technical department

• **1.4 Emergency telephone number:** Please contact the regional Scharlab distributor/dealer in your country During normal opening times: Scharlab, S.L. (+34) 93 715 18 11

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
 Classification according to Regulation (EC) No 1272/2008

GHS02 flame

Flam. Liq. 3

H226 Flammable liquid and vapour.

GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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(Contd. of page 1) GHS07 Acute Tox. 4 H332 Harmful if inhaled. Skin Irrit. 2 H315 Causes skin irritation. · 2.2 Label elements Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation. · Hazard pictograms GHS02 GHS07 GHS09 Signal word Warning Hazard statements H226 Flammable liquid and vapour. H332 Harmful if inhaled. H315 Causes skin irritation. H411 Toxic to aquatic life with long lasting effects. Precautionary statements P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof [electrical/ventilating/lighting] equipment. P241 Avoid breathing dust/fume/gas/mist/vapours/spray. P261 Wear protective gloves/protective clothing/eye protection/face protection/hearing P280 protection. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. P501 Dispose of contents/container in accordance with local/regional/national/ international regulations. · 2.3 Other hazards Results of PBT and vPvB assessment · PBT: Not applicable. · vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- · 3.1 Chemical characterisation: Substances
- · CAS No. Description
- 108-90-7 chlorobenzene
- Identification number(s)
- EC number: 203-628-5
- · Index number: 602-033-00-1
- **SECTION 4: First aid measures**
- 4.1 Description of first aid measures
- · General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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- After inhalation: Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- **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:
- CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- 5.2 Special hazards arising from the substance or mixture
- No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
- 6.2 Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.
- 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 disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling Ensure good ventilation/exhaustion at the workplace. • Information about fire - and explosion protection:
- Keep ignition sources away Do not smoke. Protect against electrostatic charges.
- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

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SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- · Additional information about design of technical facilities: No further data; see item 7.
- · Ingredients with limit values that require monitoring at the workplace:

108-90-7 chlorobenzene

- WEL Short-term value: 14 mg/m³, 3 ppm Long-term value: 4.7 mg/m³, 1 ppm Sk
- · Ingredients with biological limit values:

108-90-7 chlorobenzene

BMGV 5 mmol/mol creatinine

- Medium: urin
- Sampling time: Post shift
- Parameter: 4-chlorocatechol
- Additional information: The lists valid during the making were used as basis.

· 8.2 Exposure controls

- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

- Material of gloves
- 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.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- · 9.1 Information on basic physical and chemical properties
- **General Information**
- Appearance: Form:

Fluid

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Trade name: Chlorobenzene, EssentQ®

Colour:

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- · Odour:
- · Odour threshold:
- · pH-value:
- · Change in condition Melting point/freezing point: Initial boiling point and boiling range: 132 °C
- · Flash point:
- · Flammability (solid, gas):
- · Ignition temperature:
- Decomposition temperature:
- · Auto-ignition temperature:
- Explosive properties:
- · Explosion limits: Lower: **Upper:**
- Vapour pressure at 20 °C:
- Density at 20 °C:
- Relative density
- Vapour density
- · Evaporation rate
- · Solubility in / Miscibility with water at 20 °C:
- · Partition coefficient: n-octanol/water:
- · Viscosity: Dynamic at 20 °C: Kinematic:
- 9.2 Other information

Colourless Aromatic Not determined. Not determined.

- 29 °C
- Not applicable. 590 °C
- Not determined.
- Not determined.

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

1.3 Vol % 11 Vol %

12 hPa

1.11 g/cm³ Not determined. Not determined. Not determined.

0.49 g/l Not determined.

0.8 mPas Not determined.

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 according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 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
- Harmful if inhaled.

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· LD/LC50 values relevant for classification:

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- Oral LD50 2290 mg/kg (rat)
- · 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.
- Additional toxicological information:
- · CMR effects (carcinogenity, 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 Based on available data, the classification criteria are not met.
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · Aspiration hazard Based on available data, the classification criteria are not met.

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.
- · Ecotoxical effects:
- · Remark: Toxic for fish
- Additional ecological information:
- · General notes:

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. 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 together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number

· ADR

- · ADR, IMDG, IATA
- 14.2 UN proper shipping name

UN1134

1134 CHLOROBENZENE, ENVIRONMENTALLY HAZARDOUS

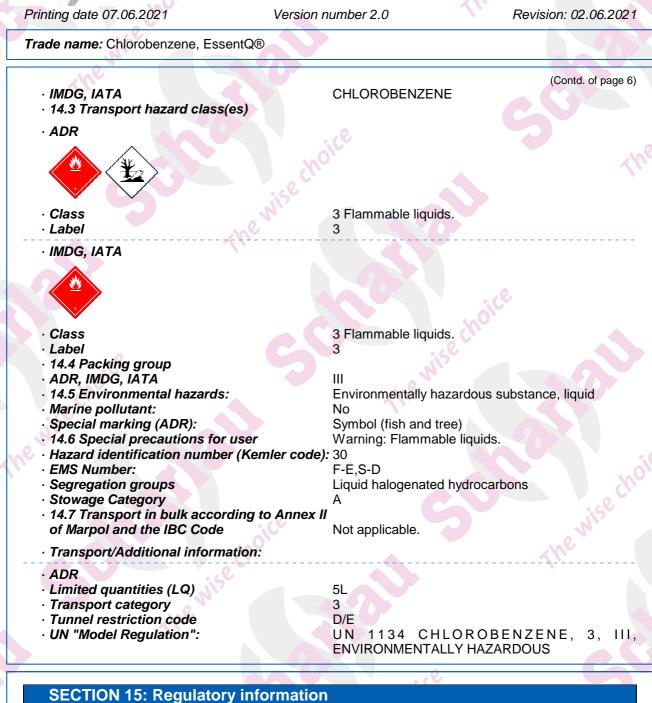
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- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances ANNEX I
- · Seveso category
- E2 Hazardous to the Aquatic Environment
- P5c FLAMMABLE LIQUIDS
- · 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, 40
- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment Annex II
 Substance is not listed.

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• 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Classification according to Regulation (EC) No 1272/2008
 The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.
- · Department issuing SDS: product safety department
- · Contact: msds@scharlab.com
- Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent

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- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 3: Flammable liquids Category 3

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Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard - Category 2

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Annex: Exposure scenario 1

- · 1 Short title of the exposure scenario Industrial use
- Sector of Use
- SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- Product category PC21 Laboratory chemicals
- · Process category PROC15 Use as laboratory reagent
- · Environmental release category
- ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) Description of the activities / processes covered in the Exposure Scenario
- See section 1 of the annex to the Safety Data Sheet.
- · 2 Conditions of use
- Duration and frequency
- Emission days (days/year): 230 8hrs (full working shift).
- 5 workdays/week.
- Environment

Wastewater is to be treated by a municipal STP. Municipal STP discharge rate <2E3 m3/d. Receiving river flow rate \geq 1.8E4 m3/d

Estimated substance removal from wastewater via domestic sewage treatment (%): 74.48

- Physical parameters
- Physical state Fluid

Concentration of the substance in the mixture Raw material.

- Used amount per time or activity 0.7 tons per year
- Other operational conditions
- Other operational conditions affecting environmental exposure Source: ESVOC SpERC 4.24. v1

Fraction released to air from process (initial release previous to MGR): 2.5 Fraction released to residual water from process (initial release previous to MGR): 2 Fraction released to ground from process (initial release previous to MGR): 0.01 Use only on hard ground.

- Other operational conditions affecting worker exposure Do not breathe gas/vapour/aerosol.
- · Risk management measures

Worker protection

Organisational protective measures

Ensure that activities are executed by specialists or authorised personnel only. Handling procedures must be well documented.

Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

Technical protective measures

Use product only in enclosed systems.

Ensure that suitable extractors are available on processing machines

Ensure good ventilation/exhaustion at the workplace.

Personal protective measures

Do not inhale gases / fumes / aerosols.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- Detailed measures on hand protection according to Safety Data Sheet, section 8.
- Measures for consumer protection Ensure adequate labelling.
- · Environmental protection measures
- · Air The exhaust air is lead to a scrubber

Water

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

Do not allow to reach sewage system.

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(Contd. of page 9) · Soil Prevent contamination of soil. The soil has to be impermeable and resistant to liquids · Disposal measures Disposal must be made according to official regulations. Ensure that waste is collected and contained. Forward for special waste incineration in compliance with local legal provisions. · Disposal procedures Must not be disposed together with household garbage. Do not allow product to reach sewage system. Waste type Partially emptied and uncleaned packaging · 3 - Exposure estimation To estimate exposures in the workplace has been used ECETOC TRA tool unless otherwise indicated. Worker (oral) The calculated value is smaller than the DNEL. Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra. · Worker (dermal) The calculated value is smaller than the DNEL. Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra. Worker (inhalation) The calculated value is smaller than the DNEL. Detailed information on the exposure estimation can be found at http://www.ecetoc.org/tra. • Environment The calculated value is smaller than the PNEC. 4 - Guidance for downstream users Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8. Whether the downstream user uses the substance / the mixture within the scope of the Exposure Scenario can be determined by means of a technical assessment. For the risk assessment, the tools recommended by ECHA can be used.

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Annex: Exposure scenario 2

- · 1 Short title of the exposure scenario Laboratory use
- · Sector of Use
- SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- Product category PC21 Laboratory chemicals
- · Process category PROC15 Use as laboratory reagent
- · Environmental release category
- ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) • Description of the activities / processes covered in the Exposure Scenario
- See section 1 of the annex to the Safety Data Sheet.
- · 2 Conditions of use
- Duration and frequency
 Emission days (days/year): 230
 8hrs (full working shift).
 5 workdays/week.
- Environment
- Wastewater is to be treated by a municipal STP. Municipal STP discharge rate <2E3 m3/d. Receiving river flow rate \geq 1.8E4 m3/d
- Estimated substance removal from wastewater via domestic sewage treatment (%): 74.48 *Physical parameters*
- · Physical state Fluid
- Concentration of the substance in the mixture Raw material.
- Used amount per time or activity 0.02 tons per year
- Other operational conditions
- · Other operational conditions affecting environmental exposure
- Source: ESVOC SpERC 4.24. v1

Fraction released to air from process (initial release previous to MGR): 100 Fraction released to residual water from process (initial release previous to MGR): 100 Fraction released to ground from process (initial release previous to MGR): 0

- Use only on hard ground.
- · Other operational conditions affecting worker exposure Do not breathe gas/vapour/aerosol.
- · Risk management measures
- Worker protection
- Organisational protective measures

Ensure that activities are executed by specialists or authorised personnel only.

Handling procedures must be well documented.

Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

Technical protective measures

Use product only in enclosed systems.

Ensure that suitable extractors are available on processing machines

- Ensure good ventilation/exhaustion at the workplace.
- · Personal protective measures
 - Do not inhale gases / fumes / aerosols.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Detailed measures on hand protection according to Safety Data Sheet, section 8.

- · Measures for consumer protection Ensure adequate labelling.
- · Environmental protection measures
- · Air The exhaust air is lead to a scrubber

· Water

Generally, prior to the introduction of wastewater into wastewater treatment plants a neutralisation is required.

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Do not allow to reach sewage system.	
· Soil	
Prevent contamination of soil.	
The soil has to be impermeable and resistant to liquids	
· Disposal measures	- ne
Disposal must be made according to official regulations.	
Ensure that waste is collected and contained.	
Forward for special waste incineration in compliance with local legal provis	ions.
Disposal procedures	
Must not be disposed together with household garbage. Do not allow p system.	product to reach sewage
 Waste type Partially emptied and uncleaned packaging 	
· 3 - Exposure estimation	
To estimate exposures in the workplace has been used ECETOC TR	RA tool unless otherwise
indicated.	
Worker (oral)	
The calculated value is smaller than the DNEL.	
Detailed information on the exposure estimation can be found at http://www	w.ecetoc.org/tra.
• Worker (dermal)	
The calculated value is smaller than the DNEL.	
Detailed information on the exposure estimation can be found at http://www	w.ecetoc.org/tra.
Worker (inhalation) The calculated value is smaller than the DNEL.	
 Detailed information on the exposure estimation can be found at http://www Environment The calculated value is smaller than the PNEC. 	w.eceloc.org/ira.
• <i>Environment</i> The calculated value is smaller than the PNEC. • <i>4</i> - Guidance for downstream users	
Whether the downstream user acts within the scope of the Exposure	Scenario can be verified
based on the information in sections 1 to 8.	Scellario can be verified
Whether the downstream user uses the substance / the mixture within the	he scope of the Exposure
Scenario can be determined by means of a technical assessment.	
For the risk assessment, the tools recommended by ECHA can be used.	

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