# Safety data sheet

*according to 1907/2006/EC, Article 31*

*Printing date 20.07.2017* *Version number 1* *Revision: 12.07.2017*

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

· **1.1 Product identifier**

· **Product name:** **2,4,5-Trichloronitrobenzene**

· **Part number:** DRE-C17762400
· **CAS Number:**
89-69-0
· **EC number:**
201-931-7
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** Reference material for laboratory use only
· **Manufacturer/Supplier:**

LGC Limited
Queens Road
Teddington
Middlesex TW11 0LY
UNITED KINGDOM

Tel :+44 (0) 20 8943 7000
Fax :+44 (0) 20 8943 2767
eMail : gb@lgcstandards.com
Web : www.lgcstandards.com

· **Further information obtainable from:**
Product safety department
eMail : sds-request@lgcgroup.com
· **1.4 Emergency telephone number:** +44 (0) 20 8943 7000 (Monday - Friday : 8am - 5pm)

## SECTION 2: Hazards identification

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

GHS06 skull and crossbones

| | | |
|---|---|---|
| Acute Tox. 3 | H301 | Toxic if swallowed. |
| Acute Tox. 3 | H311 | Toxic in contact with skin. |
| Acute Tox. 3 | H331 | Toxic if inhaled. |

GHS08 health hazard

| | | |
|---|---|---|
| Muta. 2 | H341 | Suspected of causing genetic defects. |
| Carc. 2 | H351 | Suspected of causing cancer. |
| STOT RE 2 | H373 | May cause damage to organs through prolonged or repeated exposure. |

GHS09 environment

| | | |
|---|---|---|
| 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 substance is classified and labelled according to the CLP regulation.

(Contd. on page 2)

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

*Printing date 20.07.2017* *Version number 1* *Revision: 12.07.2017*

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(Contd. from page 1)

· ***Hazard pictograms***

GHS06 GHS08 GHS09

· ***Signal word*** *Danger*
· ***Hazard statements***
*H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.*
*H341 Suspected of causing genetic defects.*
*H351 Suspected of causing cancer.*
*H373 May cause damage to organs through prolonged or repeated exposure.*
*H411 Toxic to aquatic life with long lasting effects.*
· ***Precautionary statements***
*P260 Do not breathe dust/fume/gas/mist/vapours/spray.*
*P280 Wear protective gloves/protective clothing/eye protection/face protection.*
*P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*
*P321 Specific treatment (see on this label).*
*P405 Store locked up.*
*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***
*89-69-0 5-nitro-1,2,4-trichlorobenzene*
· ***Identification number(s)*** *None*
· ***EC number:*** *201-931-7*
· ***RTECS:*** *DC2275000*
· ***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:***
*Immediately remove any clothing soiled by the product.*
*Symptoms of poisoning may occur even after several hours; therefore medical observation for at least 48 hours after the accident is recommended.*
*Remove breathing equipment only after contaminated clothing has been completely removed.*
*In case of irregular breathing or respiratory arrest provide artificial respiration.*
· ***After inhalation:***
*Supply fresh air or oxygen; call for doctor.*
*In case of unconsciousness place patient in recovery position for transport.*
*Seek immediate medical advice.*
· ***After skin contact:***
*Immediately wash with water and soap and rinse thoroughly.*
*Seek immediate medical advice.*
· ***After eye contact:*** *Rinse opened eye for several minutes under running water. Then consult a doctor.*

(Contd. on page 3)

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*according to 1907/2006/EC, Article 31*

*Printing date 20.07.2017* *Version number 1* *Revision: 12.07.2017*

***Product name:*** **2,4,5-Trichloronitrobenzene**

(Contd. from page 2)

· ***After swallowing:***
*Rinse mouth. Do not induce vomiting.*
*Call for a doctor immediately.*
· ***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 extinguishing methods suitable for surrounding conditions.*
· ***5.2 Special hazards arising from the substance or mixture***
*During heating or in case of fire poisonous gases are produced.*
· ***5.3 Advice for firefighters***
· ***Protective equipment:***
*Mouth respiratory protective device.*
*Wear self-contained respiratory protective device.*

## *SECTION 6: Accidental release measures*

· ***6.1 Personal precautions, protective equipment and emergency procedures***
*Mount respiratory protective device.*
*Avoid formation of dust.*
· ***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:***
*Dispose of 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/extraction at the workplace.*
*Remove dust thoroughly.*
*Store in cool, dry place in tightly closed receptacles.*
*Open and handle receptacle with care.*
· ***Information about fire - and explosion protection:*** *Keep respiratory protective device available.*

· ***7.2 Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
*Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.*
*Store only in the original receptacle.*
*Keep container in a well-ventilated place. Keep away from sources of ignition and heat.*
· ***Information about storage in one common storage facility:*** *Store away from foodstuffs.*
· ***Further information about storage conditions:*** *Keep container tightly sealed.*

(Contd. on page 4)

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

*Printing date 20.07.2017* *Version number 1* *Revision: 12.07.2017*

***Product name:*** **2,4,5-Trichloronitrobenzene**

(Contd. from page 3)

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

## *SECTION 8: Exposure controls/personal protection*

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

· ***8.1 Control parameters***
· ***Ingredients with limit values that require monitoring at the workplace:*** *Not required.*
· ***Additional information:*** *Lists used were valid at the time of SDS preparation.*

· ***8.2 Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
*Keep away from foodstuffs, beverages and feed.*
*Immediately remove all soiled and contaminated clothing*
*Wash hands before breaks and at the end of work.*
*Store protective clothing separately.*
*Avoid contact with the eyes and skin.*
· ***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.*
*Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced*
· ***Protection of hands:***
*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*
*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*
*The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374*

*Protective gloves*

· ***Material of gloves*** *Fluorocarbon rubber (Viton)*
· ***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:*** | *Crystalline* |
| ***Colour:*** | *Colourless* |
| · ***Odour:*** | *Odourless* |
| · ***Odour threshold:*** | *Not determined.* |

(Contd. on page 5)

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

*Printing date 20.07.2017* *Version number 1* *Revision: 12.07.2017*

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(Contd. from page 4)

| | |
|---|---|
| · ***pH-value:*** | *Not applicable.* |
| · ***Change in condition*** | |
| ***Melting point/freezing point:*** | *57.5 °C* |
| ***Initial boiling point and boiling range:*** | *288 °C* |
| · ***Flash point:*** | *Not applicable.* |
| · ***Flammability (solid, gas):*** | *Not determined.* |
| · ***Ignition temperature:*** | *Not determined* |
| · ***Decomposition temperature:*** | *Not determined.* |
| · ***Auto-ignition temperature:*** | *Not determined.* |
| · ***Explosive properties:*** | *Not determined.* |
| · ***Explosion limits:*** | |
| ***Lower:*** | *Not determined.* |
| ***Upper:*** | *Not determined.* |
| · ***Vapour pressure:*** | *Not applicable.* |
| · ***Density:*** | *Not determined.* |
| · ***Relative density*** | *Not determined.* |
| · ***Vapour density*** | *Not applicable.* |
| · ***Evaporation rate*** | *Not applicable.* |
| · ***Solubility in / Miscibility with water at 20 °C:*** | *0.0294 g/l* |
| · ***Partition coefficient: n-octanol/water:*** | *3.48 log P* |
| · ***Viscosity:*** | |
| ***Dynamic:*** | *Not applicable.* |
| ***Kinematic:*** | *Not applicable.* |
| · ***9.2 Other information*** | *No further relevant information available.* |

## *SECTION 10: Stability and reactivity*

· ***10.1 Reactivity*** *Stable under normal conditions.*
· ***10.2 Chemical stability*** *Stable under normal conditions.*
· ***Thermal decomposition / conditions to be avoided:***
*Formation of toxic gases is possible during heating or in case of fire.*
· ***10.3 Possibility of hazardous reactions*** *No dangerous reactions known.*
· ***10.4 Conditions to avoid*** *Heat.*
· ***10.5 Incompatible materials:*** *Strong oxidizing agents.*
· ***10.6 Hazardous decomposition products:***
*Formation of toxic gases is possible during heating or in case of fire.*

## *SECTION 11: Toxicological information*

· ***11.1 Information on toxicological effects***
· ***Acute toxicity***
*Toxic if swallowed, in contact with skin or if inhaled.*

| · ***LD/LC50 values relevant for classification:*** | | |
|---|---|---|
| *Oral* | *LD0* | *1070 mg/kg (mouse)* |

(Contd. on page 6)

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

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***Product name:*** **2,4,5-Trichloronitrobenzene**

(Contd. from page 5)

· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** *Based on available data, the classification criteria are not met.*
· ***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 (carcinogenity, mutagenicity and toxicity for reproduction)***
*Muta. 2, Carc. 2*
· ***Germ cell mutagenicity***
*Suspected of causing genetic defects.*
· ***Carcinogenicity***
*Suspected of causing cancer.*
· ***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***
*May cause damage to organs through prolonged or repeated exposure.*
· ***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.*
· ***Ecotoxicological effects:***
· ***Remark:*** *Toxic for fish*
· ***Additional ecological information:***
· ***General notes:***
*Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water*
*Do not allow product to reach ground water, water course or sewage system, even in small quantities.*
*Danger to drinking water if even extremely 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 of together with household garbage. Do not allow product to reach sewage system.*
· ***European waste catalogue***
*Waste disposal key numbers from EWC have to be assigned depending on origin and processing.*

· ***Uncleaned packaging:***
· ***Recommendation:*** *Dispose of in accordance with national regulations.*

## *SECTION 14: Transport information*

· ***14.1 UN-Number***
· ***ADR, IMDG, IATA*** *UN1578*

(Contd. on page 7)

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

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***Product name:*** **2,4,5-Trichloronitrobenzene**

(Contd. from page 6)

| | |
|---|---|
| · ***ADR*** | *1578 CHLORONITROBENZENES, SOLID, ENVIRONMENTALLY HAZARDOUS* |
| · ***IMDG*** | *CHLORONITROBENZENES, SOLID, MARINE POLLUTANT* |
| · ***IATA*** | *CHLORONITROBENZENES, SOLID* |

· ***14.3 Transport hazard class(es)***

· ***ADR, IMDG***

| | |
|---|---|
| · ***Class*** | *6.1 Toxic substances.* |
| · ***Label*** | *6.1* |

· ***IATA***

| | |
|---|---|
| · ***Class*** | *6.1 Toxic substances.* |
| · ***Label*** | *6.1* |
| · ***14.4 Packing group*** | |
| · ***ADR, IMDG, IATA*** | *II* |
| · ***14.5 Environmental hazards:*** | *Environmentally hazardous substance, solid; Marine Pollutant* |
| · ***Marine pollutant:*** | *Symbol (fish and tree)* |
| · ***Special marking (ADR):*** | *Symbol (fish and tree)* |
| · ***14.6 Special precautions for user*** | *Warning: Toxic substances.* |
| · ***Danger code (Kemler):*** | *60* |
| · ***EMS Number:*** | *F-A,S-A* |
| · ***Stowage Category*** | *A* |
| · ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code*** | *Not applicable.* |
| · ***Transport/Additional information:*** | |
| · ***ADR*** | |
| · ***Limited quantities (LQ)*** | *500 g* |
| · ***Transport category*** | *2* |
| · ***Tunnel restriction code*** | *D/E* |
| · ***UN "Model Regulation":*** | *UN 1578 CHLORONITROBENZENES, SOLID, 6.1, II, ENVIRONMENTALLY HAZARDOUS* |

## *SECTION 15: Regulatory information*

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***Philippines Inventory of Chemicals and Chemical Substances*** *Substance is not listed.*
· ***Australian Inventory of Chemical Substances*** *Substance is not listed.*
· ***Standard for the Uniform Scheduling of Medicines and Poisons*** *Substance is not listed.*

(Contd. on page 8)

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(Contd. from page 7)

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** *Substance is not listed.*
· ***Seveso category***
*H2 ACUTE TOXIC*
*E2 Hazardous to the Aquatic Environment*
· ***Qualifying quantity (tonnes) for the application of lower-tier requirements*** *50 t*
· ***Qualifying quantity (tonnes) for the application of upper-tier requirements*** *200 t*
· ***15.2 Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

## *SECTION 16: Other information*

*The information in this safety data sheet (SDS) has been prepared with due care and is true and accurate to the best of our knowledge. The user must determine the suitability of the information for its particular purpose, ensure compliance with existing laws and regulations, and be aware that other or additional safety or performance considerations may arise when using, handling and/ or storing the material. The information in this SDS does not purport to be all inclusive or a guarantee as to the properties of the material supplied, and should be used only as a guide. LGC makes no warranties or representations as to the accuracy and completeness of the information contained herein, shall not be held responsible for the suitability of this information for the user's intended purposes or the consequences of such use, and shall not be liable for any damage or loss, howsoever arising, direct or otherwise.*

· ***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*
*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*
*PBT: Persistent, Bioaccumulative and Toxic*
*vPvB: very Persistent and very Bioaccumulative*
*Acute Tox. 3: Acute toxicity – Category 3*
*Muta. 2: Germ cell mutagenicity – Category 2*
*Carc. 2: Carcinogenicity – Category 2*
*STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2*
*Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2*
· ***Sources***
*Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.*
· ***Data compared to the previous version altered.*** *All sections have been updated.*