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

1.1 Product identifier

- **Product name:** Toluene Liquid Density - Extended Range
- **Part number:** NIST-211D
- **CAS Number:** 108-88-3
- **EC number:** 203-625-9
- **Index number:** 601-021-00-3

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

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

- **Manufacturer/Supplier:**
  - LGC Limited
  - Queens Road
  - Teddington
  - Middlesex TW11 0LY
  - UNITED KINGDOM

- **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**
  - GHS02 flame
  - Flam. Liq. 2 H225 Highly flammable liquid and vapour.

- **GHS08 health hazard**
  - Repr. 2 H361d Suspected of damaging the unborn child.
  - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
  - Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

- **GHS07**
  - Skin Irrit. 2 H315 Causes skin irritation.

(Contd. on page 2)
Product name: Toluene Liquid Density - Extended Range

STOT SE 3  H336  May cause drowsiness or dizziness.

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  GHS08

- Signal word Danger
- Hazard statements
  H225  Highly flammable liquid and vapour.
  H315  Causes skin irritation.
  H361d  Suspected of damaging the unborn child.
  H336  May cause drowsiness or dizziness.
  H373  May cause damage to organs through prolonged or repeated exposure.
  H304  May be fatal if swallowed and enters airways.

- Precautionary statements
  P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  P280  Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P310  IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  P303+P361+P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  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
    108-88-3 toluene
  - Identification number(s) None
  - EC number: 203-625-9
  - Index number: 601-021-00-3
  - RTECS: XS 5250000
  - 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:
Symptoms of poisoning may occur even after several hours; therefore medical observation for at least 48 hours after the accident is recommended.

After inhalation: In case of unconsciousness place patient in recovery position for transport.

After skin contact:
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: Rinse mouth. Do not induce vomiting.

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
Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters
Protective equipment: Wear self-contained 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:
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 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
Store in cool, dry place in tightly closed receptacles.
- **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:
    - Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.
    - Store only in the original receptacle unless other advice is given on the CoA.
    - 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.
    - Store in cool, dry conditions in well sealed receptacles.

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

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**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:**

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<tr>
<th>108-88-3 Toluene</th>
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<td>WEL</td>
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- **Additional information:** Lists used were valid at the time of SDS preparation.

- **8.2 Exposure controls**

- **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 skin.
  - 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.

(Contd. on page 5)
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

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

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: Liquid
  · Colour: Colourless
· Odour:
  · Odour: Aromatic
  · Odour threshold: Not determined.
· pH-value: Not determined.
· Change in condition
  · Melting point/freezing point: -95 °C
  · Initial boiling point and boiling range: 110-111 °C
· Flash point: 4 °C
· Flammability (solid, gas): Not determined.
· Ignition temperature: 535 °C
· Decomposition temperature: Not determined.
· Auto-ignition temperature: Not determined.
· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
Product name: Toluene Liquid Density - Extended Range

- Explosion limits:
  - Lower: 1.2 Vol %
  - Upper: 7 Vol %
- Vapour pressure at 20 °C: 29 hPa
- Density at 20 °C: 0.87 g/cm³
- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.
- Solubility in / Miscibility with water at 15 °C: 0.5 g/l
- Partition coefficient: n-octanol/water: 2.73 LogP
- Viscosity:
  - Dynamic at 20 °C: 0.6 mPas
  - Kinematic: Not determined.
- 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: Based on available data, the classification criteria are not met.
- LD/LC50 values relevant for classification:
  - Oral (LD50): 636 mg/kg (rat)
  - Dermal LD50: 12,200 mg/kg (rabbit)
  - Inhalative LC50/4 h: 49 mg/l (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.
Product name: Toluene Liquid Density - Extended Range

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
  Repr. 2
· 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
  Suspected of damaging the unborn child.
· STOT-single exposure
  May cause drowsiness or dizziness.
· STOT-repeated exposure
  May cause damage to organs through prolonged or repeated exposure.
· Aspiration hazard
  May be fatal if swallowed and enters airways.

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SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

| EC50/72h | 12.5 mg/l (Algae) |
| LC50/96 h | 31.7 mg/l (fish) |

· 12.2 Persistence and degradability
  Biodegradable
  Biodegradation: 69 %/5 d (BOD/ThOD);

· 12.3 Bioaccumulative potential No further relevant information available.

· 12.4 Mobility in soil No further relevant information available.

· Ecotoxicological effects:
  Behaviour in sewage processing plants: EC50 Nitrosomonas sp.: 84 mg/L/24 h

· 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.

· 12.5 Results of PBT and vPvB assessment
  PBT: Not applicable.
  vPvB: Not applicable.

· 12.6 Other adverse effects No further relevant information available.

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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.
SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, IMDG, IATA: UN1294
  - ADR: 1294 TOLUENE
  - IMDG, IATA: TOLUENE

- 14.3 Transport hazard class(es)
  - ADR, IMDG, IATA

  - Class: 3 Flammable liquids.
  - Label: 3

- 14.4 Packing group
  - ADR, IMDG, IATA: II

- 14.5 Environmental hazards:
  - Marine pollutant: No
  - Yes (PP)

- 14.6 Special precautions for user
  - Danger code (Kemler): Warning: Flammable liquids.
  - 33
  - EMS Number: F-E,S-D

- 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
    - Transport category: 2
    - Tunnel restriction code: D/E
  - UN "Model Regulation": UN1294, TOLUENE, 3, II

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: 5,000 t

(Contd. on page 9)
Product name: Toluene Liquid Density - Extended Range

- **Qualifying quantity (tonnes) for the application of upper-tier requirements**: 50,000 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction**: 3, 40, 48
- **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**:
  - 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 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
  - PP: Severe Marine Pollutant
  - 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
  - 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

- **Sources**