

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

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

1.1 Product identifier

Product name NC45 Membrane, Cellulose nitrate, 0.45 µm 25 mm, 100 pack

Catalogue Number 10401106



EC number Not available.

CAS number 9004-70-0

Product description Not available.

Product type Solid.

Other means of identification

Chemical formula HNO₃.xUnspecified

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

Identified uses

Use in laboratories

1.3 Details of the supplier of the safety data sheet

Supplier GE Healthcare UK Ltd
Amersham Place
Little Chalfont
Buckinghamshire HP7 9NA
England
+44 0870 606 1921

Hours of operation
08.30 - 17.00

Person who prepared the MSDS: msdslifesciences@ge.com

United Kingdom (UK) GE Healthcare UK Ltd
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA

1.4 Emergency telephone number
0870 606 1921

National advisory body/Poison Centre

United Kingdom (UK) Health professionals should contact the National Poisons Information Service (NPIS) by telephone, or use TOXBASE www.toxbase.org.

NPIS <http://www.npis.org/> advise that others seeking specific information on poisons should contact:
In England and Wales: NHS Direct - 0845 4647 or 111
In Scotland: NHS 24 - 08454 24 24 24
In N Ireland: Contact your local GP or pharmacist during normal hours; click here (www.gpoutofhours.hscni.net/) for GP services Out-of-Hours.



SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition UVCB

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Sol. 2, H228

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 Warning
 Hazard statements Flammable solid.

Precautionary statements

Prevention Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
 Response Not applicable.
 Storage Not applicable.
 Disposal Not applicable.
 Supplemental label elements Not applicable.

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

Special packaging requirements

Containers to be fitted with child-resistant fastenings Not applicable.
 Tactile warning of danger Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII Not applicable.
 Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII Not applicable.
 Other hazards which do not result in classification None known.

SECTION 3: Composition/information on ingredients

Substance/mixture UVCB

Product/ingredient name	Identifiers	%	Classification	
			Regulation (EC) No. 1272/2008 [CLP]	Type
Nitrocellulose	CAS: 9004-70-0	100	Flam. Sol. 2, H228 See Section 16 for the full text of the H statements declared above.	[A]

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	In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.
Inhalation	No special recommendations.
Skin contact	Wash with soap and water. Get medical attention if irritation develops.
Ingestion	No special recommendations.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. 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

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	Flammable solid.
Hazardous combustion products	Decomposition products may include the following materials: nitrogen oxides

5.3 Advice for firefighters

Special precautions 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.



SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** Eliminate all ignition sources. Vacuum or sweep up material and place in a designated, labelled waste container.
- 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".

6.2 Environmental precautions

No special recommendations.

6.3 Methods and materials for containment and cleaning up

- Small spill** Eliminate all ignition sources. Vacuum or sweep up material and place in a designated, labelled waste container.
- Large spill** Eliminate all ignition sources. Vacuum or sweep up material and place in a designated, labelled waste container.

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). Do not ingest. Avoid contact with eyes, skin and clothing. 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 only non-sparking tools.
- 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 between the following temperatures: 18 to 25°C (64.4 to 77°F). 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. 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.

Seveso II Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
C7b: Highly flammable (R11)	5000	50000

7.3 Specific end use(s)

- Recommendations** Analytical chemistry. Laboratory chemicals Research and Development
- 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** No special recommendations.

DNELs/DMELs

No DELs available.

PNECs

No PECs available.

8.2 Exposure controls



Appropriate engineering controls No special ventilation requirements.

Individual protection measures

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: safety glasses with side-shields.

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.

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.

Respiratory protection A respirator is not needed under normal and intended conditions of product use.

Environmental exposure controls No specific hazard.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Colour	White.
Odour	Odourless.
Odour threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Closed cup: 12.85°C
Evaporation rate	Not available.
Flammability (solid, gas)	Product becomes a 'Flammable Solid category 2' after removing the membrane from the package. If the product is still in its original packaging it is not a 'Flammable Solid category 2'.
Burning time	Not available.
Burning rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	0 kPa [room temperature]
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Partially soluble in the following materials: methanol, diethyl ether and acetone. Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	>160°C
Decomposition temperature	Not available.
Viscosity	Dynamic (room temperature): Not applicable. Kinematic (room temperature): Not applicable.



Explosive properties Not available.**Oxidising properties** Not available.**9.2 Other information**

No additional information.

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).**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
Nitrocellulose	LD50 Oral	Rat	>5 g/kg	-

Conclusion/Summary Not toxic.**Irritation/Corrosion****Conclusion/Summary** Not available.**Sensitisation****Conclusion/Summary** Not available.**Mutagenicity****Conclusion/Summary** Not available.**Carcinogenicity****Conclusion/Summary** Not available.**Reproductive toxicity****Conclusion/Summary** Not available.**Teratogenicity****Conclusion/Summary** Not available.**Specific target organ toxicity (single exposure)**

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure Routes of entry not anticipated: Oral, Dermal, Inhalation.**Potential acute health effects****Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.**Ingestion** No known significant effects or critical hazards.**Skin contact** No known significant effects or critical hazards.**Eye contact** No known significant effects or critical hazards.**Symptoms related to the physical, chemical and toxicological characteristics****Inhalation** No specific data.**Ingestion** No specific data.

Skin contact No specific data.
Eye contact No specific data.

Delayed and immediate effects and also 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

Not available.

Conclusion/Summary Not toxic.
General No known significant effects or critical hazards.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects No known significant effects or critical hazards.
Other information Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Nitrocellulose	Acute EC50 579000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours

Conclusion/Summary No known significant effects or critical hazards.

12.2 Persistence and degradability

Conclusion/Summary Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

PBT Not applicable.
 P: Not available. B: Not available. T: Not available.

vPvB Not applicable.
 vP: Not available. vB: Not available.

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 Scenarios(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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard classes	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	<p>Remarks The product is not regulated as Dangerous Goods for transport according to a expert opinion by BAM (Bundesanstalt für Materialforschung and -prüfung) with number 2. 2-91/15-E on 12 May 2015. "The above named nitrocellulose membrane filters (in form of round filters, pre-cut parts and curved parts) do not fulfill the criteria of Class 1 'Explosives' and the division 4.1 'Flammable Solids' of RID/ADR (GGVSE), IMDG-Code (GGVSee) and the ICAO-Technical Instructions."</p>	<p>Remarks The product is not regulated as Dangerous Goods for transport according to a expert opinion by BAM (Bundesanstalt für Materialforschung and -prüfung) with number 2. 2-91/15-E on 12 May 2015. "The above named nitrocellulose membrane filters (in form of round filters, pre-cut parts and curved parts) do not fulfill the criteria of Class 1 'Explosives' and the division 4.1 'Flammable Solids' of RID/ADR (GGVSE), IMDG-Code (GGVSee) and the ICAO-Technical Instructions."</p>	<p>Remarks The product is not regulated as Dangerous Goods for transport according to a expert opinion by BAM (Bundesanstalt für Materialforschung and -prüfung) with number 2. 2-91/15-E on 12 May 2015. "The above named nitrocellulose membrane filters (in form of round filters, pre-cut parts and curved parts) do not fulfill the criteria of Class 1 'Explosives' and the division 4.1 'Flammable Solids' of RID/ADR (GGVSE), IMDG-Code (GGVSee) and the ICAO-Technical Instructions."</p>	<p>Remarks The product is not regulated as Dangerous Goods for transport according to a expert opinion by BAM (Bundesanstalt für Materialforschung and -prüfung) with number 2. 2-91/15-E on 12 May 2015. "The above named nitrocellulose membrane filters (in form of round filters, pre-cut parts and curved parts) do not fulfill the criteria of Class 1 'Explosives' and the division 4.1 'Flammable Solids' of RID/ADR (GGVSE), IMDG-Code (GGVSee) and the ICAO-Technical Instructions."</p>

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 73/78 and the IBC Code 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

Europe inventory Not determined.

Black List Chemicals Not listed

Priority List Chemicals Not listed

Integrated pollution prevention and control list (IPPC) - Air Not listed

Integrated pollution prevention and control list (IPPC) - Water Not listed

Seveso II Directive

This product is not controlled under the Seveso II Directive.

Danger criteria

Category

C7b: Highly flammable (R11)

Chemical Weapons Convention List Schedule I Chemicals Not listed

Chemical Weapons Convention List Schedule II Chemicals Not listed

Chemical Weapons Convention List Schedule III Chemicals Not listed

15.2 Chemical Safety Assessment Not applicable.

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]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

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

Classification	Justification
Flam. Sol. 2, H228	On basis of test data

Full text of abbreviated H statements H228 Flammable solid.

Full text of classifications [CLP/GHS] Flam. Sol. 2, H228 FLAMMABLE SOLIDS - Category 2



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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.



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