



Specialized in chemicals

Hefei TNJ Chemical Industry Co.,Ltd.

B911 Xincheng Business Center,
Qianshan Rd. Hefei 230022 China

Tel : (0086) 551 65418679

Fax: (0086) 551 65418697

Email: info@tnjchem.com

Site: www.tnjchem.com

Material Safety Data Sheet

Nitrocellulose MSDS

Section 1: Chemical Product and Company Identification

Product Name: Nitrocellulose

CAS#: 9004-70-0

RTECS: QW0970000

Chemical Formula: C₁₂H₁₇(ONO₂)₃O₇~C₁₂H₁₄(ONO₂)₆O₇

Contact Information for Emergency: (0086) 551 65418678

Hefei TNJ Chemical Industry Co.,Ltd.

B911 Xincheng Business Center

Qianshan Road, Hefei

230004Anhui

China

Tel : (0086) 551 65418679

Fax: (0086) 551 65418697

Email: info@tnjchem.com

Site: www.tnjchem.com

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS # %	By weight
Nitrocellulose (Cellulose nitrate, nitrogen content < 12.6 %)	9004-70-0	65 - 75 % (w/w)
Isopropanol	67-63-0	35 - 25 % (w/w)

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification



DANGEROUS

H228 Flammable solid Class 1



WARNING

H302 Harmful if swallowed

H316 Slight skin irritation

H320 Eye irritation

Precautionary Statements

Precautions

P210

Keep away from heat, flame, spark.

P233

Keep container closed.

P240

Containers and receiving equipment grounded connection

P241

Use explosion-proof equipment.

P242

Do not use the tools which produce spark.

P243

Measures taken to prevent electrostatic discharge.

P280

Wear protective gloves and goggles.

Measures

P303+P361+P353

Immediately remove contaminated clothing and flush skin with plenty of water.

P370+P378

Use plenty of water to extinguish fire.

P301+P312

Ingestion: Call a physician if unwell.

P330

Gargle.

P332+P313

Skin irritation: Call a physician.

P305+P351+P338

Eye contact: Immediately flush eyes with an eye-wash-solution or plenty of water, holding the eyelids apart, for at least 10 minutes.

Call a physician.

P337+P313

Call a physician if eye irritation persists..

Storage

P403+P235

Stored in ventilated places;

Keep low temperature.

Handling

P501

Inner wrappage handling: in accordance with national state and local environmental regulations.

Section 4: First Aid Measures

Skin contact:

Remove contaminated clothing, flush skin with soap and water.

Call a physician if irritation persists.

Wash contaminated clothing and dry it for next use.

Eye contact:

Immediately flush eyes with an eye-wash-solution or plenty of water, holding the eyelids apart, for at least 10 minutes.

Call a physician.

Inhalation:

Remove to fresh air and keep still.

If breathing is difficult, give oxygen.

If not breathing, give artificial respiration.

Call a physician immediately.

Ingestion:

Give large quantities of water.

Don't induce vomiting.

Never give anything by mouth to an unconscious person.

Call a physician.

Section 5: Fire and Explosion Data

Hazardous combustion products

CO、CO₂、nitrous oxide and other hazardous gas.

In case of fire, heat, sparks, static electricity or friction it burns easily.

It produces oxynitride if oxygen is not enough for burning.

Use plenty of water to completely wet nitrocellulose remains after its burning, because it becomes unstable and easy

to reburn.

Extinguishing methods

Burning nitrocellulose can only be distinguished with plenty of water.

Unsuitable: foam, sand, CO₂ and dry powder extinguisher

Protection of fire fighters

Fire-fighters must work from the windward side. They should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Wear protective equipment, pay attention to sudden blasting event, use non-sparking tools.

Section 6: Accidental Release Measures

Emergency treatment

Avoid sources of ignition.

Ensure adequate ventilation.

Wet nitrocellulose with water, and then burn it at suitable places.

Wear suitable protective equipment/clothing such as Self-contained breathing apparatus, antistatic work clothing.

Avoid eye contact, skin contact and inhalation of toxic gas.

Environment Precautions

Spilled nitrocellulose must be wetted by plenty of water and transferred into the tank or special collector, and to the treatment plants for disposal in accordance with Disposal Method(part 13).

Use non-sparkling tools.

Section 7: Handling and Storage

Handling

Ensure adequate ventilation.

Operators must receive special training to strictly follow the safety operation procedure.

No smoking, and keep away from flame, heat, shock, impact, friction, sparks or static electricity.

Tools used should be of non-ferrous materials such as copper, brass or wood. Tools made of plastic material must not be used because of their tendency to produce static electricity.

Make sure that the inner PE bag is grounded when dumping nitrocellulose.

Do not take the inner PE bag out of the outer wrappage.

Equipped with corresponding varieties and number of fire-fighting equipment and emergency treatment equipment.

Storage

The storage should be in accordance with national state and local environmental regulations.

Stored in cool and well ventilated places.

Keep containers closed. Recommended storage temperature is under 30°C, the maximum storage temperature should not exceed 35 °C.

Keep away from heat including direct sunlight, flame or any source of ignition. Do not smoke in the storage area.

Keep apart from acid, alkali, amine, oxidant and flammable liquid.
Mechanical equipment and tools which produce sparks are prohibited.
Storage areas shall be provided with suitable materials.
The warehouse should have static grounding device.
Storage height should not exceed 2 m.
Nitrocellulose should be use up within 1 year (not exceed 2 years) since the production date.

Section 8: Exposure Controls/Personal Protection

Exposure control:

The ethanol exposure limit should be in accordance with national state regulations.
Ensure good ventilation or use local exhaust to maintain ambient vapour concentrations below the exposure limit.
Personal protection:
Respiratory protection: Use effective local exhaust to keep the concentration of damping agents below the exposure limits. Where suitable engineering controls are not fitted or are inadequate, wear suitable respiration equipment e.g. an approved organic vapour respirator.
Hand protection: Wear solvent resistant rubber gloves($\geq 0.5\text{mm}$), and the gloves must be anti-static.
Eye protection: Protective goggles with side shield and or full face shield.
Skin protection: Flame-retarding, anti-static protective clothing and anti-static protective shoes are recommended.
Other protection: No smoking, no eating, no drinking in the work site.No drinking alcoholic beverages before work.
It is recommended to take a shower after work.

Section 9: Physical and Chemical Properties

Form: fibrous, pellets, granular
Colour: white
Odour: of IPA
Bulk density: 250 - 600 kg/m³
Vapour pressure of IPA: 4.16 kPa at 20 °C
Critical temperature of IPA: 234.9 °C
Flash point of IPA: 12°C(closed)
Ignition temperature of IPA: 460°C
Melting point: NC: N/A,
EA: -88.5°C
Boiling point of IPA: 82.5°C
Heat of combustion
kJ/mol
kJ/kg IPA: 2001.8,
NC: 2799×10³
Critical pressure of IPA: 5.3MPa
Lower explosive limit of IPA (20°C): 2.0%(V/V)
Upper explosive limit of IPA (20°C): 12.0%(V/V)

Solubility in water: Nitrocellulose is not soluble in water. EA is completely miscible with water.
Solubility in solvents Nitrocellulose is soluble in esters, ketones and glycol-ethers.

Section 10: Stability and Reactivity Data

Stability: Stable under recommended storage and processing conditions.

Conditions to avoid: Avoid exposure to heat, flame, sparks, friction.

Stored under recommended conditions.

The increase of temperature will lower the stability of nitrocellulose and decline its quality.

Material to avoid: Acid, alkali, amine and oxidizer.

Hazardous decomposition products: CO, CO₂, oxides of nitrogen and other potentially toxic fumes.

Section 11: Toxicological Information

Nitrocellulose itself is not toxic. Toxicity of the product depends on the solvent (EA).

Nitrocellulose:

Ingestion: Acute toxicity

LD₅₀ oral, rat (Wistar): > 2000 mg/kg, no symptoms of poisoning

(OECD Guideline for Testing of Chemicals, no. 401)

Contact with skin Not harmful

Irritation of the skin (rabbit) : non-irritant (OECD Guideline for Testing of Chemicals, No. 404)

Contact with eyes non-irritant

Irritation of the eyes/rabbit: non-irritant

(OECD Guideline for Testing of Chemicals, no. 405)

Inhalation —

Isopropanol:

Ingestion LD₅₀ oral, rat: 4570 mg/kg

Inhalation LC₅₀, inhalation, rat: 46-73 mg/l (4 h)

Contact with skin Irritant

Dermal rabbit > 12800 mg/kg

(OECD Guideline for Testing of Chemicals, No. 404)

Contact with eyes Irritant

Irritation of the eyes/rabbit: strong irritation

(OECD Guideline for Testing of Chemicals, no. 405)

Section 12: Ecological Information

There is no evidence to suggest that nitrocellulose has any detrimental effect on the environment. See data below for details of wetting agent environmental toxicity:

Nitrocellulose:

Fish toxicity LC50, 96 h (fathead minnow) > 10000 mg/l

Acute fish toxicity LC50, 96 h (Brochydemic rerio), OECD 203 > 5000 mg/l

Acute toxicity for daphnia ED 50, 48 h (Daphnia magna water flea) OECD 202 > 10000 mg/l

Acute toxicity for algae, EC 50, 78 h, OECD 201 > 10000 mg/l

Acute bacterial toxicity, EC 50, OECD 209 > 10000 mg/l

Bio accumulation not lipophile, no bioaccumulation potential Log POW < 0

Degradability approx. 20 % after 28 days OECD 301 B

COD 460 mg/g, DIN 38409, part 41

BOD5 0 mg O2/l at 20 mg/l, DIN 38409, H 51

Water pollution class not hazardous to water

ethanol:

Fish toxicity LC 50 > 9000mg/l (96 h)

Bacteria toxicity EC 50 1050 mg/l

Water flea toxicity EC 50 > 9000mg/l (24 h)

Seaweed toxicity tests > 1000mg/l (72 h)

COD 2.22 mg/l

BOD5 2.21 mg/l

Degradability 99 %

Bioaccumulation low

Log (POW) 0.05

Water pollution class 1

Section 13: Disposal Considerations

Product disposal:

It is recommended that small quantities of nitrocellulose should be dissolved prior to destruction as waste nitrocellulose-lacquer.

Waste disposal should be in accordance with national state and local environmental regulation.

The empty container may retain hazardous residue. Observe all label precautions. Keep away from heat, sparks and flames. Do not weld or use cutting torch on or near container.

Remove polyethylene liner for disposal as hazardous waste.

Remove or erase all labels. Then offer container for recycling/recondition or puncture or otherwise destroy empty container and dispose of in facility permitted for non hazardous waste.

Section 14: Transport Information

Nitrocellulose with IPA

Packing label Flammable solid

UN No. 2556

Packing Groups II

Dangerous goods No. 41031

Packaging: packaged with steel drums, paper drums, cartons or paper-plastic bag.

Transportation: strong shaking and impact prohibited, stored by dangerous goods regulations.

Section 15: Other Regulatory Information

Symbol:

F: Hazard description: highly flammable

Xi: Hazard description: irritant

R 11: Highly flammable

R 36: Irritating to eyes

R 67: Vapours may cause drowsiness and dizziness

S 7: Keep container tightly closed

S 16: Keep away from sources of ignition - no smoking

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S 33: Take precautionary measures against static discharges

S 37/39: Wear suitable gloves and eye/face protection

Section 16: Other Information

The technical information provided in this safety data sheet should only be used for the purposes of assessing hazards with respect to safety or the environment. It should not be used as a technical specification or for engineering calculations.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.