



T.N.C Industrial Co.,Ltd

Product Safety Data Sheet

Date of issue: 2022-03-09

1. Identification of the substance/preparation and the company

Product: Dense Nitrocellulose Damped with 30% Isopropyl Alcohol (IPA)

Use : Binder or film former in the manufacture of coatings, inks and paints

Manufacturer : T.N.C. Industrial Co., Ltd.

Address : 19F-1, No. 1071, Chung Cheng Road, Taoyuan, Taiwan, R.O.C.

Telephone : (886-3)-3566289

Facsimile : (886-3)-3562400

Emergency telephone number (24 hours) :

US	1-800-424-9300
Others	Mr. David Kao
	TEL : 886-3-324-1126
	FAX : 886-3-324-1128

2. Hazards identification

HIGHLY FLAMMABLE, IRRITANT

Nitrocellulose can be ignited by flame, heat, friction, sparks or static electricity.

Isopropanol causes eye, skin and respiratory tract irritation. Over exposure of vapour may produce dizziness, drowsiness for even unconsciousness.

In case of fire and decomposition of nitrocellulose toxic gases may be produced in some circumstances (see section 5).

Nitrocellulose decomposes in contact with strong acids and strong alkalis.

Industrial Nitrocellulose wetted with isopropanol



Signal Word Danger

Hazard Statements :

H228	flammable solid
H319	causes serious eye irritation
H336	may cause drowsiness or dizziness

Precautionary Statements :

P210	keep away from heat / sparks / open flames / hot surfaces; no smoking
P230	keep wetted with isopropanol
P233	keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting/...equipment
P243	take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P280	wear protective gloves/clothing/eye protection/face protection
P305/351/338	if in eyes, rinse cautiously with water for several minutes; remove contact lenses, if present and easy to do; continue rinsing
P304/P340	If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312	Call a poison center or doctor/physician if you feel unwell
P337/313	if eye irritation persists, get medical attention
P370/P378	In case of fire : use water for extinction
P371/P380/P375	In case of fire : evacuate area; fight fire remotely due to the risk of explosion
P403	Store in a well-ventilated place
P405	Store locked up (for USA only)

P501

Dispose of contents/container in accordance with government regulations

3. Composition/information on ingredients

I t e m	Nitrocellulose (Cellulose nitrate, nitrogen content < 12.2 %)	Isopropanol
Concentration(%)	70 % (w/w)	30 % (w/w)
CAS no.	9004-70-0	67-63-0
EC index no.	603-037-01-3	603-117-00-0
EINECS no.	not applicable	200-661-7
Hazard symbol	F	F, X _i
R-phrases	11	11-36-67
S-phrases	16-33-37/39	7-16-24/25-26

This safety data sheet applies to all nitrocellulose types mentioned under chapter 16.

4. First- aid measures

Inhalation of vapour & materials
of combustion:

Remove to fresh air and keep still.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Call a physician immediately.

Skin contact:

Immediately flush skin with plenty of water.
Remove contaminated clothing.
Call a physician if irritation persists.
Wash clothing before reuse.

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.

Ingestion:

Do not induce vomiting.
Give large quantities of water.
Never give anything by mouth to an
unconscious person.
Call a physician.

5. Fire-fighting measures

Extinguishing methods

Burning nitrocellulose can only be extinguished by large quantities of water.

Unsuitable: sand, CO₂, foam or dry powder.

Specific risks

Drum lids can be blown off.

Burning nitrocellulose may produce toxic fumes in some circumstances.

The fumes may contain nitrous gases if there is insufficient oxygen for efficient combustion.

After the fire is extinguished, material may be unstable, could reignite or produce toxic fumes. therefore ensure that residual material is thoroughly wetted with water.

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.

6. Accidental release measures

Personal Precautions

Avoid sources of ignition.

Do not smoke.

Ensure adequate ventilation.

Avoid contact with skin and eyes!

Avoid inhaling vapours.

Use suitable protective equipment/clothing (see section 8).

Cleaning up

Spilled nitrocellulose must be thoroughly wetted with plenty of water, swept up carefully and kept in tightly closed watertight container (see section 13).

Use tools that do not produce sparks (see section 7).

Environment Precautions

Prevent spilled nitrocellulose from contaminating water courses, sewers, soil or vegetation.

7. Handling and Storage

Handling

Do not smoke.

Do not drop, slide, bang or roll the drums.

Keep away from flame, heat, shock, impact, friction, sparks or static electricity.

Do not allow wetted nitrocellulose to dry out, because, nitrocellulose becomes more sensitive in the dry state.

Keep container tightly closed when not in use.

Ensure adequate ventilation.

Pull polyethylene liner, if present, carefully down over the outside of the drum.

Ensure packaging is grounded/earthed during emptying.

Do not remove the liner from the package during emptying.

Tools used with nitrocellulose 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.

Avoid contact with strong alkaline and acidic materials, amines or oxidising agents.

Keep quantity of product in the processing area to a minimum. This would not be expected to exceed the amount necessary for one shift.

Storage

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

Store in a cool and well ventilated place appropriate to the packaging material.
Keep in original containers.

Keep away from heat including direct sunlight, flame or any source of ignition.

Do not smoke in the storage area.

Nitrocellulose should not be stored together with incompatible materials for instance strong alkaline and acidic materials, amines or oxidising agents.

Nitrocellulose should not be stored together with flammable liquids.

Rotate inventory on a "First in/first out" basis
(date of production is printed on the container label).

Once a package has been opened, the entire contents should be used as quickly as possible.

Do not open or empty containers within the storage area.

Pallet loads should be stacked no more than two high. (only for UK)

We recommend using the nitrocellulose within 12 months from month of manufacture.
Once a package is opened, the entire content should be used as soon as possible.

8. Exposure controls/Personal protection

Exposure control:

Observe exposure limits given in national legislations for isopropanol.

Concentration of isopropanol in the workplace atmosphere should be monitored.

Ensure good ventilation or use local exhaust to maintain ambient vapour concentrations below the exposure limit.

EXPOSURE LIMITS (ISOPROPANOL) : In accordance with local regulations

	OEL Short Term Limit (1)	
	ppm	mg/m ³
Eg France	400	980

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 gloves. For example Butyl rubber ($\geq 0,5$ mm) has been shown to be effective against heavy exposure to isopropanol, with a breakthrough time in excess of 8 hours. 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.

9. Physical and chemical properties

Form:	fibrous, pellets, granular
Colour:	white
Odour:	of isopropanol
Bulk density:	250 - 600 kg/m ³
Vapour pressure of isopropanol:	41.6 x 10 ² Pa at 20 °C
Solubility in water:	Nitrocellulose is not soluble in water. Isopropanol is completely miscible with water.
Solubility in solvents	Nitrocellulose is soluble in esters, ketones and glycol-ethers.
pH value:	Not applicable
Viscosity:	not applicable
Deflagration temperature:	≥ 180 °C (nitrocellulose)

10. Stability and reactivity

Stability:	Stable under recommended storage and handling conditions.
Conditions to avoid:	Avoid exposure to heat, flame, sparks, shock and friction. Stability decreases and deterioration starts with increasing temperatures. Do not allow evaporation of the alcohol. Observe recommended storage conditions.
Material to avoid:	Nitrocellulose decomposes when in contact with strong alkaline and acidic materials, amines or oxidising agents.
Hazardous decomposition products:	CO, CO ₂ , oxides of nitrogen and other potentially toxic fumes.

11. Toxicological Information

Nitrocellulose itself is not toxic. Toxicity of the product depends on the alcohol.

Nitrocellulose:

Ingestion:	Acute toxicity LD ₅₀ 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)
Irritation of the eyed/rabbit:	non-irritant (OECD Guideline for Testing of Chemicals, no. 405)
Contact with eyes	non-irritant Irritation of the eyes/rabbit: non-irritant (OECD Guideline for Testing of Chemicals, no. 405)

Isopropanol:

Ingestion	acute toxicity : LD ₅₀ oral, rat: 4570 mg/kg
Inhalation	acute toxicity : LC ₅₀ , 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)

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 LC ₅₀ , 96 h (fathead minnow)	> 10000 mg/l
Acute fish toxicity LC ₅₀ , 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
BOD ₅	0 mg O ₂ /l at 20 mg/l, DIN 38409, H 51
Water pollution class	not hazardous to water

Isopropanol:

Fish toxicity LC 50	> 9000 mg/l (96 h)
Bacteria toxicity EC 50	1050 mg/l
Daphnia toxicity EC 50	> 9000 mg/l (24 h)
Algae toxicity	> 1000 mg/l (72 h)
COD	2.22 mg/l
BOD ₅	2.21 mg/l
Degradability	99 %
Bioaccumulation	low
Log (POW)	0.05
Water pollution class	1

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.

14. Transport information

Proper Shipping Name	UN No	Packing Groups	Hazard Class
Nitrocellulose with alcohol	2556	II	4.1

ADR / RID				
Proper Shipping Name	Substance Identification No	Hazard Class	Packing Group	Classification Code
Nitrocellulose with alcohol	2556	4.1	II	D

IATA/IMDG				
Proper Shipping Name	UN No	Packing Groups	Hazard Class	Marine Pollutant
Nitrocellulose with alcohol	2556	II	4.1	No

15. Regulatory information

Complies with the following national/regional chemical inventory requirements:

AICS	Australian Inventory of Chemical Substances,
DSL	Domestic Substance list (Canada)
ENCS	Existing and New Chemical Substances (Japan)
IECSC	Inventory of Existing Chemical Substances in China
KECI	Korean Existing Chemicals Inventory
PICCS	Philippine Inventory of Chemicals and Chemical Substances
TSCA	Toxic Substances Control Act (USA)
CICR	Inventory and Control of Chemicals (Turkey)
NZIoC	New Zealand Inventory of Chemicals
NECI	National Existing Chemical Inventory (Taiwan)

Labelling in accordance with the EEC directives:

Symbol:

F	: Hazard description: highly flammable
X	: 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

15.1 REACH Registration

Nitrocellulose itself is exempt from REACH registration as it is a polymer. It falls into the special category of a chemically modified naturally occurring polymer, so we have to consider both the starting material and the chemical used to carry out the transformation.

The starting material is cellulose which is exempt from registration. The chemical used to chemically modify the cellulose is nitric acid and this requires registration. The damping alcohol also requires to be registered.

The relevant registration numbers are as follows

Chemical	CAS Number	REACH Registration Number
Nitric Acid	7697-37-2	05-2116594045-42-0000
Isopropyl Alcohol	67-63-0	05-2117072130-60-0000

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

16. Other information

This data sheet was prepared in accordance with Directive 91/155/EEC, as amended by Directives 93/112/EC and 2001/58/EC.

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.

Information in this document is believed to be accurate and is given in good faith but it is for the customer to satisfy itself of the suitability for its own particular purpose.

The information provided is intended to describe the product for the purposes of health, safety and environmental requirements only.

It is not intended, and should be construed as a warranty.