

According to
GHS

Safety Data Sheet – SDS

Nitrocellulose with Alcohol
Cat #: 10831 and 10832

Date 06/29/2023

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1. IDENTIFICATION OF PRODUCT AND COMPANY

Chemical Name: Nitrocellulose with Alcohol

Main uses: Nitrocellulose is a resin used in the manufacture of paints and other coatings.

Supplier: Ladd Research

Address: 3 Ewing Place, Essex Junction, VT 05452 USA

Emergency Telephone: 1-800-424-9300 (Chemtrec)

Emergency Telephone (International):

+1-703-741-5500 (Chemtrec)

E-mail: sales@laddresearch.com

2. IDENTIFICATION OF HAZARDS

Most important hazards:

Flammable solid material. Alcohol reduces the speed of burning of nitrocellulose and evaporation dangerously increases its burning rate Causes eye irritation.The steam of inhaled isopropanol can cause damage to the central nervous system.It may cause respiratory irritation (irritation of the respiratory tract).It causes damage to kidney through prolonged or repeated exposure.It may cause damage to blood vessels, liver and spleen through prolonged or repeated exposure.It may be harmful if swallowed and by enters airways.It may cause drowsiness and dizziness.These hazards relate to the action of isopropanol in the body.

Effects of the Product

Adverse effects on human health:

Irritating to eyes and skin.The inhaled alcohol vapor can affect the respiratory system (depression).Absorption through the skin and the eyes:it may cause mild irritation.Ingestion may

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Environmental effects:

It is not expected that this product presents a danger to the environment.

Physical and chemical hazards:

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

Main symptoms:

Redness, tearing, burning and pain in the eyes. Redness of the skin and mucous membranes. Abdominal pain, nausea, gastroenteritis, vomiting, hypothermia and diarrhea. Aspiration pneumonia. Dizziness, drowsiness, lack of coordination, loss of consciousness, emotional lability, slowed reaction time, ataxia, fever. It may cause tremors, irritability, loss of concentration and confusion by prolonged exposure.

Hazard rating of the chemical:

Solid flammable - Category 2

Serious eye damage/eye irritation - Category 2A - Hazard Statement Code H336

Aspiration hazard - Category 2 - Hazard Statement Code H319

Classification according CLP-Regulation - Hazard Statement Code H225

Rating system used:

ABNT-NBR 14725 Standard – Part 2:2010.

CLP-Regulation (EC) No 1272/2008

Adoption of Globally Harmonized System of Classification and Labelling of Chemical Products, ONU.

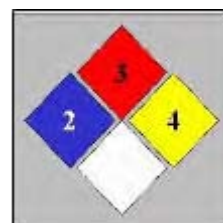
HommelDiamond - NFPA 704

Emergency Overview:

Flammable solid.

Appropriate labeling elements

Pictograms:



Signal Word: Warning

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Hazard phrases:

H206 - Fire, blast or projection hazard; increased risk of explosion if desensitizing agent is reduced

H228: Flammable solid.

H319: It causes severe eye irritation.

H336 It may cause drowsiness or dizziness.

Precautionary phrases:

P210 Keep away from heat/sparks/open flames/hot surfaces - No smoking.

P212 - Avoid heating under confinement or reduction of the desensitizing agent.

P230 - Keep wetted with alcohol.

P233 - Keep container tightly closed.

P240 Ground the container vessel and the product receiver during transfers.

P280 Wear protective gloves/protective clothing/ eye protection/face protection.

P304+P340 In case of inhalation:Remove the person to fresh air and keep at rest in a position comfortable for breathing P370+P378 In case of fire:To extinguish, use water.

P305+P351+P338 In case of contact with eyes:Rinse thoroughly with water for several minutes.In the case of wearing contact lenses, remove them, if it is easy.Continue rinsing.

P337+P313 If eye irritation persists:Consult a physician.

P370+P378 In case of fire: To extinguish, use water.

P370+P380+P375 - In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

P401 Store in accordance with local regulations as applicable.

P501 Dispose of contents/containers accordin to local regulations as applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Mixture

Chemical or common name:Nitrocellulose moisturized with Isopropanol

Ingredients or impurities contributing to hazard (%m):

Ingredients	Concentration (%)	No.CAS	REACH Registration number
Nitrocellulose (<12.5% N)	63-72	9004-70-0	*
Isopropyl Alcohol	28-37	67-63-0	01-2119457558-25

* According to the classification of the European Chemicals Agency (ECHA), as it is a natural polymer chemically modified, the nitrocellulosedoes not require REACH.

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4. FIRST AID MEASURES

FIRST AID MEASURES

Inhalation:

Remove the victim to fresh air and keep at rest. Monitor respiratory function. If the victim is breathing with difficulty, provide oxygen. If necessary, provide artificial respiration. Seek medical attention. Take this SDS.

Skin contact:

Remove contaminated clothing and shoes. Wash exposed skin with large amounts of water for at least 15 minutes. Wash contaminated clothing and shoes before reuse. Seek medical attention. Take this SDS.

Eye contact:

Immediately flush with running water for at least 15 minutes, keeping eyelids open. Remove contact lenses if applicable, if they can be removed easily. Seek medical attention immediately. Take this SDS.

Ingestion:

Wash the victim's mouth with water. Seek medical attention. Take this SDS.

Actions that must be avoided:

Induction of vomiting. Do not give anything by mouth to an unconscious person. Mouth to mouth resuscitation.

Protection of first-aiders and/or notes to physician:

Keep the patient at rest and warm. Watch for signs of respiratory insufficiency and assist ventilation if necessary. The use of activated charcoal is not recommended. Do not use emetics. Place the victim on the side, with mouth in down position, because there is a risk of choking and aspiration of vomit. Symptomatic treatment should include, above all, support measures to correct electrolyte, metabolic disorders, and respiratory care. Consider orotracheal or nasotracheal intubation in unconscious patients or respiratory arrest. Monitor cardiac rhythm and treat arrhythmias if necessary. It causes depression in the central nervous system.

5. FIRE FIGHTING MEASURES

Appropriate means of extinction:

The combustion of the nitrocellulose may be extinct with large amount of water applied nebulizer or steamer.

Extinction media not recommended:

Water in the form of full jet.

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Specific risks relating to the measures:

Keep away curious people and isolate the area. Fight fire from a safe distance, with the wind in the back. Alcohol slows the burning of Nitrocellulose, therefore, it is important to avoid evaporation. If the alcohol evaporates and the nitrocellulose is exposed to impact, friction, heat source, sparks, static electricity quickly enter into ignition and, if kept in a confined environment, it may explode. The nitrocellulose contains enough oxygen to support self-combustion, even in atmospheres with low oxygen levels. Apply cold water on the walls of the containers, even after the total extinction of the fire. In the event of major fire in areas of shipment or storage, use cannon or fire hydrants and evacuate the area. After extinguishing the fire, the material may become unstable. Make sure that the waste material is moistened. Residual water used to fight the fire cannot be drained or discarded without treatment. Keep it in dikes to be treated later.

Specific hazards of combustion of chemical:

Vapours may form explosive mixtures with air. Being heavier than air tends to collect in low or confined areas (such as sewers or basements) with danger of explosions. They can travel long distances, reach an ignition source and have return of flame or new sources of fire in open and confined environments. Closed containers may explode with the heat. Prevent the creation of flammable or explosive concentrations of vapor in air and avoid vapor concentrations higher than the occupational exposure limit (isopropanol).

Equipment for fire/fire crew protection:

Respiratory protection equipment of standalone type (SCBA) with positive pressure and full protective clothing (approach uniform).

6. CONTROL MEASURES OF SPILL OR LEAK

Personal precautions

Ignition source removal:

Remove all sources of ignition. Avoid open flames or sparks.

Prevention of inhalation and contact with skin, eyes and mucous membranes:

Restrict access to area until complete cleaning. Avoid inhalation, contact with skin or eyes. Use personal protective equipment as described in Section 8.

Environmental precautions:

Prevent that spilled material reaches waterways. Do not allow to point to sewer or stormwater.

Alarm systems:

It is recommended the installation of fire alarm system installation and leak detection, in the storage locations and usage of the product.

Method for Cleaning

Procedures to be adopted:

Notify the security team, isolate and maintain ventilated place. Prohibit access to people without function in emergency care. Stop the leak if this can be done without risk. In case of spill,

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immediately collect all the product overflowed the surface or equipment to a drum and keep it moistened with alcohol or water. Use brooms and shovel to collect the residue deposited in humidified container with water. Collect material in appropriate containers, sign them and remove them to safe place.

Prevention of secondary hazards:

Eliminate all sources of ignition in the area immediately. Do not smoke. Use personal protective equipment for handling the spill. Check the floor, eliminating any possibility of waste accumulation in cracks and recesses.

7. HANDLING AND STORAGE

Technical measures appropriate for handling

Workers exposure prevention:

Avoid breathing dust the product. Avoid inhalation and contact with skin, eyes and clothing. Use personal protective equipment as described in Section 8.

Fire and Explosion Prevention:

Using copper tools, bronze or other non-ferrous materials. Do not work near ignition sources such as sparks, pilot lights, welding activities, grinding, cigarette flames, etc. It should not be used plastic tools because of their tendency to produce static electricity. The vapors are heavier than air and may spread on the ground. Vapours may form explosive mixtures with air. Electrical equipment should be protected to the appropriate standard. It should be used tools that do not cause sparks. Avoid electrostatic charge build-up, grounding the equipment during the transfer of the material. Use ventilation systems that do not generate sparks and safe electrical system (shielded) in the handling area. keep nitrocellulose moistened with alcohol.

Precautions for safe handling:

Handle the product only in well ventilated areas or with ventilation and general exhaustion/ suitable location. Avoid inhalation and contact with skin, eyes and clothing. Avoid breathing vapors/mists of the product. Use personal protective equipment as indicated in Section 8.

Hygiene measures:

Do not eat, drink or smoke while handling the product. Wash hands before eating, drinking, smoking or using the toilet. Contaminated clothing should be changed and washed before reuse. Beware with nitrocellulose waste into the pockets.

Measures for storage

Appropriate:

Store in a cool, well-ventilated, fire-resistant, away from sources of heat, ignition and direct sunlight. Store at room temperature; the maximum temperature does not exceed 40 ° C. Do not allow the product to be dried. It is recommended that the loaded pallets are not stocked with more than two times. Store away from food. Keep containers tightly closed and separate from incompatible materials. Do inventory control, first consuming the oldest manufacturing

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products.(FIFO - First In / First Out).The storage should be in accordance with relevant environmental legislation.Do not allow the evaporation of the alcohol.Storage areas and work should be resistant to fire and have plenty of water.It is recommended the use of Sprinkler System (flood type).It should be used shoes and antistatic floors.The container should be opened only in the operational areas, never in storage areas.If possible, in the storage of nitrocellulose, there should be no electrical / electronic equipment.If necessary, use shielded explosion-proof equipment.Maintain a minimum amount of product in the processing area.Do not drop, slide or roll packing with violence.Open containers should be properly separated and kept upright to prevent leakage / exhaust, the plastic bag must be closed with plastic clamp, thereby avoiding the evaporation of ethanol.Do not store with perchlorates, peroxides, acids and alkaline materials.

Inappropriate:

Direct sunlight, heat.Poorly ventilated environment.High temperature.Storage with incompatible substances.Electrical ground of absence, lack of protection with lightning rod, sparks, open flames, heat and other sources of ignition.

Products and incompatible products:

The nitrocellulose is incompatible with strong alkaline substances and acids; strong oxidizing agents, amines, acetic peroxide *bromazida*, chlorine, etc.

Safe materials for packaging

Recommended:

Drum in Kraft paper fiber with cover and fiber hard plate background.The nitrocellulose is packaged in an anti-static plastic bag double wall, with closing with nylon clamp.

Inadequate:

Metal container tightly closed.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Specific control parameters

Occupational exposure limits:

	TLV - TWA (ACGIH) (PPM)	TLV - STEL (ACGIH) (PPM)	IDLH - NIOSH (PPM)	LT BRASIL NR.15 (ppm)
Isopropyl Alcohol	200	400	2000	310

Engineering control measures:

Appropriate exhaust system, in order to prevent emanation and the consequent inhalation of alcohol vapor.If this is not sufficient to maintain concentrations of particulates and/or solvent vapor below occupational exposure limits, suitable respiratory protective should be used.To minimize the risk of explosion due to the presence of vapor solvents, electrical equipment must be in the specification class.To prevent electric spark, it should be provided ground conductor

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(ground wire) for all equipment. Work areas should be addressed properly with safety devices (emergency showers and eye wash). The concentration of solvent in the atmosphere of the workplace should be monitored frequently.

Personal protective equipment

Eye/face protection:

Safety goggles against splash.

Skin protection:

Clothes (shirt and pants) or flame retardant cotton fabric. Do not use synthetic fabric clothes due to the buildup of static electricity. Protective gloves resistant to solvents. Safety shoes with antistatic soles.

Respiratory protection:

Use masks with filter for organic vapors

It should be used respiratory protective equipment powered by air when this product is sprayed. Use masks with filter for organic vapors. It is appropriate to maintain a formal respiratory protection program, including placement and periodic medical examinations, individual physical tests, environmental monitoring, respirator maintenance and appropriate location to store the equipment.

Special precautions:

Complete protector clothing that covers the entire body. Use face shield. Contaminated clothing should be removed and the skin washed with soap and water or an appropriate product for skin. People who directly handle this substance and those subject to possible exposure should be informed of the toxicity and dangers of this substance and educated in safety and emergency procedures in case of exhibitions.

9. Physical and Chemical Properties

- | | |
|--|---------------------------------------|
| • Appearance: | Fibers in the form of white flakes |
| • Odor: | Alcohol characteristic |
| • pH: | Not applicable |
| • Melting/freezing point: | Not available |
| • Boiling Point: | 82.3°C (IPA) |
| • Flash Point: | 11.7°C (closed cup). |
| • Evaporation rate: | Not available |
| • Flammability: | Flammable. |
| • Lower/upper explosive limit: | 2% (LIE) 12% (LSE) - (IPA) |
| • Vapor Pressure: | 33 mmHg at 19 ° C (5.33 kPa) - (IPA). |
| • Vapor Density (air = 1): | 2.1 (Air=1). |
| • Solubility in water: | Insoluble. |
| • Partition coefficient - n-octanol/water: | 0.05 log POW (IPA) |
| • Self-igniting: | Product is not self igniting |
| • Decomposition temperature: | ≥180 °C |
| • Viscosity: | Not available |

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10. Stability and reactivity

Reactivity

Chemical stability:

The product is stable since maintained the appropriate conditions of handling and storage described in item seven.

One should avoid contact of the nitrocellulose with incompatible chemicals, it may be decompose.

Possibility of hazardous reactions:

The Nitrocellulose decomposes in contact with amines, strong acids and bases. It reacts slowly with calcium hypochlorite, silver oxide and ammonia causing risk of fire and explosion. It reacts violently with strong oxidants such as nitric acid, silver nitrate, mercury nitrate or magnesium perchlorate a risk of fire and explosion. Isopropanol may react violently with strong oxidizers such as chlorine, permanganate or chromate in an acid solution. Dry Nitrocellulose is sensitive to impact and can ignite.

Conditions to be avoided:

Do not expose to sunlight, heat or ignition source, as well as the incompatible products listed above. Do not allow, under any circumstances, that the product is dry. Static discharge, spark, open flame, heat, sunlight or other sources of ignition and keep away from oxidizing agents, or other incompatible substances/ combustible materials.

Incompatible materials or substances:

Strong oxidizing agents (nitric acid, silver nitrate, mercury nitrate, magnesium perchlorate), acids and alkalis, amines, calcium hypochlorite, silver oxide, ammonia. The isopropanol reacts with bromine pentafluoride, perchlorates, uranium hexafluoride, iodine heptafluoride, acetyl bromide, potassium tert-butoxide, acetyl chloride, mercury nitrate, sodium hydrazide, tetraphosphorus hexaoxide, perchlorate, sodium peroxide.

Hazardous decomposition products:

Decomposition by thermal oxidation may produce carbon monoxide, carbon dioxide, nitrogen oxides and cyanide gas.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

LD/LC50 values relevant for classification:

9004-70-0 NITROCELLULOSE

orally LD50 ≥ 5000 mg/kg (rat)

67-63-0 2-propanol

orally LD50 5840 mg/kg (rat)

dermal LD50 13400 mg/kg (rabbit)

16.4 ml/kg (rabbit)

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By inhalation LC50 > 10000 ppm (OECD 403)
~ 6h steam; in the whole body.
No animals died during the study.
LC50/4 h 30 mg/ L (rat)
at least 104 weeks (6 hours/day, 5 days/week)

Corrosion/ irritation of the skin

Acts as degreasing on the skin.

In prolonged or repeated skin contact, it may cause dermatitis.

Serious eye damage/ eye irritation

Chance of light irritant action.

Respiratory sensitization or skin

Inhaled isopropanol vapor can affect the upper airway system.

Local effects:

May cause eye irritation and reversible local damage.Redness of the skin and mucous membranes.

Chronic Toxicity:

Repeated or prolonged contact with the product when moistened can lead to removal of natural fats from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.It may cause skin sensitization.It may cause liver damage with fat accumulation in the liver and cirrhosis in cases of chronic exposure, but also can cause effects in the central nervous system with tremors, irritability, loss of concentration, confusion, cardiomyopathy, arrhythmia, oesophagealvarice and myopathies.

Germ cell mutagenicity

Non classified as mutagenic (CIR-Cosmetic Ingredient Review).

Carcinogenicity:

Not classified as a carcinogen (IARC)

Toxicity to reproduction:

Isopropanol can damage fertility or the unborn child if swallowed.

Toxicity to target specific organs - Repeated exposure

Isopropanol may cause depression of the central nervous system with dizziness, drowsiness, dizziness, headache, incoordination and loss of consciousness.It may cause irritation to the respiratory tract and gastrointestinal tracts with cough, sore throat, nausea, burning sensation, abdominal pain and diarrhea.

Toxicity to target specific organs - Repeated exposure

Isopropanol may cause damage to the central nervous system with tremors, irritability, loss of concentration and confusion repeated or prolonged exposure.It causes liver damage with fat accumulation in the liver and cirrhosis in case of chronic exposure if swallowed.It may cause skin dryness after repeated contact.

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Aspiration hazard:

Inhaled isopropanol vapor can affect the upper airway system, causing respiratory irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

The product is not expected to present danger to the environment.No data available for the preparation.Information on the ingredients described below:

NITROCELLULOSE

CL₅₀ (algae:*Selenastrumcapricornutum*, 96h) = 730 mg/ L

Isopropanol:

CL₅₀ (fish:*Pimephales promelas*, 96h) = 6550 mg/ L

CE₅₀ (*Daphnia magna*, 48h) = 13299 mg/ L

CE₅₀ (*Scenedesmus subspicatus*, 96h)> 1000 mg/kg

Persistence and degradability:

It's expected low persistence and high degradability.

Bioaccumulative potential:

It presents low bioaccumulative potential in aquatic organisms.

Isopropanol:BCF:3 and Log Kow = 0.05 this value suggests that the potential for bioconcentration in aquatic organisms is low.

Mobility:

Soil:Very high mobility.

Other adverse effects:

Not available

13. CONSIDERATIONS ON TREATMENT AND DISPOSAL

Recommended methods for the treatment and disposal applied to

Product:

The residue may be treated with an alkali and then sent to biological treatment.

Dive the piece or residue on sodium sulfide solution at 10% for a period of two hours or in a caustic soda solution at 15% for a period of 04 hours.

Another way to dispose is to burn the waste in thin layers in the crematorium (no more than five cm of height).Do not burn in a boiler or incinerator or any other enclosed equipment.Alternatively, destroy burning small amounts in the open and safe place, in open fire and under competent control.The ignition must be remote.The waste removal and waste disposal must be in accordance with local environmental regulations.It must be disposed as

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hazardous waste according to CONAMA Resolution 005/1993, NBR 10.004 / 2004 and state law.

Remains of products:

Idem to the product.

Used packaging: Packaging: remove all waste from plastic bags and wash. Do not reuse the bags. After emptying, examine to ensure that all Nitrocellulose has been removed (the Waste must be disposed of cleaning rags).

14. TRANSPORT INFORMATION

National and international regulations

Ground rules:

Decree No. 96.044, of May 18, 1988: Approves the Regulations for the Transport of Dangerous Goods and other measures.

National Land Transportation Agency (ANTT): Resolutions no. 420/04, 701/04, 1644/06, 2657/08, 2975/08 and 3383/10.

Maritime regulations:

DPC - Directorate of Ports and Coasts (Transport in Brazilian waters)

Maritime Authority Standards (NORMAM)

NORMAM 01/DPC: Vessels Employed in the Open Sea Navigation

NORMAM 02/DPC: Vessels employed in Inland Navigation

IMO - "International Maritime Organization"

International Maritime Dangerous Goods Code (IMDG Code) - Incorporating Amendment 34-08; 2008 Edition.

Air regulation:

IATA - "International Air Transport Association"

Dangerous Goods Regulation (DGR) - 51th Edition, 2010.

DAC - Department of Civil Aviation: IAC 153-1001 (Civil Aviation Instruction).

ONU number: 2556

Class or subclass of risk: 4.1

Number of risk: 40

Packing group: II.

Proper Shipping Name: NITROCELLULOSE WITH ALCOHOL (at least 25% alcohol by weight, and up to 12.6% nitrogen, by dry mass).

15. Regulations

Regulations:

ABNT-NBR 14725-4:2014 Standard

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Information on risks and safety:

Ordinance 3214/1978: Regulatory Standards of the MTE, NR-15.

16. Other Information

This SDS was based on the current knowledge of the product and provides information on the protection, safety, health and the environment.

It is warned that the handling of any chemical requires prior knowledge of its hazards for the user. The company user of the product promotes training of its employees regarding possible risks from exposition to chemical product.

Acronyms:

ACGIH - American Conference of Governmental Industrial Hygienists

BCF - Bioconcentration factor;

CAS - Chemical Abstracts Service;

CL₅₀ - Lethal Concentration 50;

DL₅₀ - Lethal Dose 50;

CE₅₀ - Effective Concentration 50;

IARC - International Agency for Research on Cancer;

IDLH - Immediately Dangerous to Life or Health;

NIOSH - National Institute for Occupational Safety and Health;

No. EC - Number of European Commission;

RS – 15- Regulatory Standard 15:

CNS - Central Nervous System;

STOT - Specific target organ toxicity;

TLV-TWA (Threshold Limit Value - Time Weighted Average) - Average concentration in time for a normal working day (8 hours) or week (40 hours);

TLV-STEL (Threshold Limit Value - Short-Term Exposure Limit)- Exposure limit for a short period for 15 minutes up to four times per day with an interval of 60 minutes.

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Included recommendations of the September 18 report of 2014 according of section 2:17
(Explosives desensitized) of GHS revision 6.