

MATERIAL SAFETY DATA SHEET

NITROCELLULOSE

1 IDENTIFICATION OF THE PRODUCT AND THE COMPANY

1.1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION:

Product Name : Dense Nitrocellulose Damped with 30% Isopropyl Alcohol (IPA)
Product Code : RS Code
Chemical Family : Nitrocellulose For Industrial Use

1.2 IDENTIFICATION OF THE COMPANY:

RAR Resin & Chemical Industries JLT
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2 HAZARD IDENTIFICATION

Ingredients name / CAS number	Exposure Limits	Concentration (%)
Isopropyl Alcohol (IPA) (also named is Isopropanol) 67-63-0	OSHA: 400.000 ppm TWA 980.000 mg/m ³ 500.000 mg/m ³ STEL 1225.000 mg/m ³ ACGIH: 400.000 ppm TWA 985.000 mg/m ³ 500.000 ppm STEL 1230.000 mg/m ³	Greater than 1%

3 PHYSICAL PROPERTIES

Physical Form	: Dense Material
Appearance	: Chips
Color	: White
Odor	: Characteristics alcohol
PH	: 6.0 - 7.0 (neutral)
Boiling point	: Not Established
Melting point	: Not Established
Viscosity	18-25 cps ---> 1.6 ~ 2.2 sec (25% concentration)
(TNC internal standard tested by falling ball method)	1/8 sec ---> 1.6 ~ 3.0 sec (25% concentration) 1/4 sec ---> 3.0 ~ 9.0 sec (25% concentration) 1/2 sec ---> 3.0 ~ 5.0 sec (20% concentration) 5-6 sec ---> 4.5 ~ 6.5 sec (12.2% concentration) 30~40 sec---> 30 ~ 40 sec (12.2% concentration)

DISCLAIMER

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Solubility in water	: Insoluble
Specific Gravity	: Not Established
Bulk Density	: Approximately 400 g/liter
% Volatile by volume	: Approximately 20%
Vapor pressure	: 41.6mbar at 68°F (20°C) Isopropyl alcohol
Nitrogen Content	: Less than 12.2%

4 FIRE AND EXPLOSION

Flash point	: Approximately 54°F (12°C) of damping agent
Extinguishing Media	: Water only

Special Fire Fighting Procedures:

Use water spray only (do not use foam CO₂ or dry powder). Firefighters should be equipped with self-contained breathing apparatus and a fully enclosed chemically resistant suit to protect against potentially toxic and irritating fumes. Fumes emitted from nitrocellulose fires may contain nitrous gases. Nitrocellulose contains oxygen so that suffocating type extinguishing media is not effective. Therefore, use water in flooding amounts from a distance to cool and extinguish burning material. Firefighters must work from the windward side. Darting flames can develop during nitrocellulose fires and the lids of the fiber drums can be blown off.

5 HUMAN HEALTH DATA

Route(s) of Entry	: Eye and skin contact, inhalation of vapors or mists, accidental ingestion.
Human Effects and Symptoms of Overexposure	: N/A
Acute Inhalation	: IPA vapors and mists may be irritating to the mucous membrane of the respiratory tract with symptoms of coughing and nasal discharge. Overexposure to inhalation of IPA may produce central nervous system depression with symptoms of headache, dizziness, confusion or coma.
Chronic Inhalation	: Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.
Acute Skin Contact	: Contact with IPA may cause irritation resulting in drying, itching, reddening and swelling.
Chronic skin Contact	: None known.
Acute Eye Contact	: Contact with IPA liquid or vapor may cause irritation resulting in stinging tearing and reddening.
Chronic Eye Contact	: None Known.
Acute Ingestion	: Ingestion of IPA may produce central nervous system depression with symptoms of headache, dizziness, confusion or coma.
Chronic Ingestion	: Chronic exposure to organic solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability, and loss of coordination.
Carcinogenicity	: The components of this product are not listed by NTP - IARC or regulated as a carcinogen by OSHA.
Medical Condition	: N/A
Aggravated by Exposure	: Persons with impaired pulmonary function may be more susceptible to the effect of this product.

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6 EMERGENCY AND FIRST AID PROCEDURES

- First Aid for Eyes** : Immediately flush eyes with plenty of water. Call a physician.
- First Aid for Skin** : Flush skin with soap and plenty of water. Remove contaminated clothing. Wash clothing before reuse. If irritation occurs, call a physician.
- First Aid for Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen, call a physician.
- First Aid for Ingestion** : If swallowed, call a physician.

7 EMPLOYEE PROTECTION RECOMMENDATIONS

- Eye Protection Requirements** : Protective glasses or full-face shield.
- Hand Protection Requirements**: Rubber gloves, long sleeved shirts and pants. Employees should wash their hands face before eating, drinking or using tobacco products.
- Respirator Requirements** : Workplace ambient concentrations should be monitored and if the exposure limit for IPA is exceeded a NIOSE/MSHA approved organic vapor respirator should be worn.
- Ventilation Requirements** : Use local exhaust to maintain ambient vapor concentrations below the exposure limits for IPA.
- Additional Protective Measures** : The use of anti-static footwear, clothing and flooring is recommended. Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product.

8 REACTIVITY DATA

- Stability**: Stable. However, avoid exposure to heat, as rate of deterioration increases with temperature and time.
- Hazardous Polymerization**: Will not occur.
- Incompatibilities**: Nitrocellulose decomposes when in contact with alkalis (e.g. amines) or strongly acidic materials.
- Instability Condition**: See “stability”
- Decomposition products**: CO, CO₂, NO_x oxides of nitrogen and other potentially toxic fumes.

9 SPILL AND LEAK PROCEDURES

Spill or Leak Procedures: Utilize protective clothing and equipment. Thoroughly wet spilled nitrocellulose with water. Nitrocellulose should be can be appropriately destroyed. Tools used with nitrocellulose should be of nonferrous material such as aluminum, copper or brass. Tools made of plastic material should be avoided because of their tendency to produce static electricity. Spill area can be avoided because of their tendency to produce static electricity. Spill area can be washed with water, collect wash water for approved disposal.

Waste Disposal Method: Waste disposal should be in accordance with existence federal, state and local environmental regulations.

Empty Container Precautions: Handling and storage precautions also apply to containers when empty. Do not reuse empty containers. Recondition or dispose of empty container in accordance with government regulations.

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10 SPECIAL PRECAUTIONS & STORAGE DATA

Storage Temperature (min/max): room temperature approx. below 86°F (30°C)

Shelf Life: Use oldest material first. Follow procedures as listed below in "Handling / Storage Precautions". Storing this product for longer than a year is not recommended.

Special Sensitivity: Damped nitrocellulose must be prevented from either fully or partially dry out. Dry nitrocellulose constitutes a high fire and explosion hazard, which can be ignited by flame, heat, shock, impact, friction or static electricity.

Handling/Storage Precautions: Properly damped nitrocellulose is a flammable solid. Keep away from heat, flame or any source of ignition. Store in a dry place, away from direct sunlight in original containers. Rotate inventory in a "First in / First out" basis. No other chemicals or materials should be stored with nitrocellulose. Reseal containers immediately after use. Under no circumstance should nitrocellulose be allowed to dry out. Do not open or empty fiber drum within the storage area. Keep quantity of product in the processing plant to a minimum. This should not exceed the amount necessary for one shift. Pull the anti-static polyethylene liner carefully down over the outside of the fiber drum. Always attach grounding wire to the complete packaging system (fiber drum and anti-static polyethylene liner) before emptying fiber drums. While emptying fiber drum, to avoid explosion hazard from impact, do not pound on bottom of fiber drum. Tools used with nitrocellulose chip should be nonferrous materials such as aluminum, copper and brass. Tools made of plastic material should be avoided because of their tendency to produce static electricity. The use of anti-static footwear, clothing and flooring is recommended. Avoid unnecessary contact. Use in well ventilated areas.

11 SHIPPING INFORMATION

D.O.T. shipping name: Nitrocellulose, wet with not less than 30% alcohol.

Technical shipping name: Nitrocellulose damped with 30% Isopropyl Alcohol (IPA)

D.O.T. Hazard Class: Flammable solid

UN/NA number: NA2556

Product RQ(1lbs): None

D.O.T. Hazard Label: Flammable solid

D.O.T. Placard: Flammable solid

Product Label: 1/2", 1/4", 1/8", 1/16", 5/6", 15-20", 30-40", 60-80", 18-25cps, 30-35cps with 30% IPA.

IMDG shipping name: Nitrocellulose, containing at least 25% alcohol, by weight, and not exceeding 12.6% nitrogen content by dry weight.

IMDG Class: Class 4.1

IMDG UN number: UN 2556.

Page number: 4159

Package Group: II

12 ANIMAL TOXICITY DATA

Acute Toxicity

Oral: LAD₅₀: Greater than 2,000 mg/kg (Wistar Rat) --no poisoning symptoms ✕

Eye Effects: Non-irritating to rabbit eyes (24 hrs) ✕

Skin Effects: Non-irritating to rabbit skin (4 hrs) ✕

Aquatic Toxicity Greater than 10,000 mg/l (96h) Brachydanio rerio ✕

✕ Based on testing of incorporated nitrocellulose

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13 FEDERAL REGULATORY INFORMATION

OSHA Status: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: on TSCA Inventory list.

CEPA (Canada Environmental Control Act): on NPRI list.

CERCLA Reportable Quantity: None

SARA TITLE III:

Section 302 Extremely Hazardous Substance: None

Section 311/312 Hazard Categories: Fire Hazard

Section 313 Toxic Chemicals: None

RCRA Status: When discarded in its purchased form, this product meets the criteria of ignitability and reactivity, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001 nad D003). (40 CFR 261.20-24) Flashpoint 54°F.

14 OTHER REGULATORY INFORMATION

The following chemicals are specifically listed by individual states: other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate in your state.

Component Name / CAS number	Concentration	State Code
Nitrocellulose 9004-70-0	Greater than 1%	PA1, NJ2, NJ3
Isopropanol 67-63-0	Greater than 1%	PA1, MA, NJ4

MA = Massachusetts Hazardous Substance List

NJ2 = New Jersey Environmental Hazardous Substance List

NJ3 = New Jersey Special Health Hazardous Substance List

NJ4 = New Jersey Other - Included in 5 predominant ingredients > 1%

PA1 = Pennsylvania Hazardous Substance List.

15 REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product:

No known specific national and / or regional regulations applicable to this product (including its ingredients).

16 OTHER INFORMATION

Date of printing	11/18/2011
Date of issue/Date of revision	11/18/2011
Date of previous issue	No previous validation
Version	1
Key to abbreviations	ADN/ADNR = European Provisions concerning the International Carriage of Dangerous Goods by Road ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals

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IATA = International Maritime Dangerous Goods

LogPow = logarithm of the octanol / water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of
Pollution From Ships, 1973 as modified by the Protocol of 1978.
("Marpol" = marine pollution)

RID = The regulations concerning the International Carriage of
Dangerous Goods by Rail

UN = United Nations

Not available

References

Indicates information that has changed from previously issued version.

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