MATERIAL SAFETY DATA SHEET OHS 16615

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUBSTANCE : NITROCELLULOSE, WETTED IPA, ,

CAS NUMBER : 9004 - 70 -0
RTECS NUMBER : QW0975200
TRADE NAMES/SYNONYMS : CELLULOSE NITRATE ; NITROCOTTON; GUN COTTON ; PYROXYLIN ; NA 2556 ; STCC 4907060 ; OHS 16615

CHEMICAL CHARACTERIZATION : DAMPED WITH ISOPROPYL ALCOHOL
NITROGEN CONTENT LESS THAN : 12.3%

MANUFACTURER : KCNC LTD.
CHONJU INDUSTRIAL COMPLEX NO. 3
821 YONGAM-LEE, BONGDONG-EUB, WANJU-GUN,
CHOLLA BUK-DO, KOREA
IN THE CASE OF EMERGENCY : 82-63-260-2000

CREATION DATE : 03 / 14 / 1985

REVISION DATE : 02 / 1 / 2006

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT	NITROCELLULOSE	ISOPROPYL ALCOHOL
CAS NUMBER	9004-70-0	67-63-0
PERCENTAGE	< 70	> 30

OTHER CONTAMINANTS ; NONE

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4) : HEALTH = 0, FIRE=3, REACTIVITY=3

EMERGENCY OVERVIEW

White Fibrous or granular solid

Causes respiratory tract, skin, and eye irritation. May damage the liver.

May affect the central nervous system.

May explode from heat, shock or friction.

Do not grind or subject to heat or shock. Keep away from heat, sparks, and flame.

Avoid contamination by and source, Keep container tightly closed.

Washing thoroughly after handling. Use only with adequate ventilation.

POTENTIAL HEALTH EFFECTS :

INHALATION :

◆ **SHORT TERM EFFECTS : May cause irritation. Additional effects may include**

difficulty breathing, headache, drowsiness, drunkenness and twitching.

◆ **LONG TERM EFFECTS : In addition to effects from short term exposure, nausea**

may occur.

SKIN CONTACT :

◆ **SHORT TERM EFFECTS : May cause irritation. Additional effects may include rash.**

◆ **LONG TERM EFFECTS : Same effects as short term effects.**

EYE CONTACT :

◆ **SHORT TERM EFFECTS : May cause irritation. Additional effects may include**

tearing

◆ **LONG TERM EFFECTS : No information available on significant adverse effects.**

INGESTION :

◆ **SHORT TERM EFFECTS : May cause redness and swelling of the skin, redness and swelling of the mouth, rash, low body temperature, vomiting, digestive disorders, involuntary defecation and/or urination, low blood pressure, irregular heartbeat, headache, drowsiness, drunkenness, disorientation, dilated pupils, lung congestion, liver damage, convulsions, shock and coma.**

◆ **LONG TERM EFFECTS : In addition to effects from short term exposure, diarrhea, twitching and loss of memory may occur**

CARCINOGEN STATUS :

◆ **OSHA : N**

◆ **NTP : N**

◆ **IARC : N**

SECTION 4 FIRST AID MEASURES

INHALATION :

FIRST AID - Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT :

FIRST AID - Remove contaminated clothing and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least

15-20 minutes). Get medical attention immediately.

INGESTION :

FIRST AID - Remove isopropyl alcohol by gastric lavage with tap water or emetic (Dreisbach, Handbook of Poisoning, 11th Ed.) or gastric lavage with warm water or 3-5 % sodium bicarbonate solution unless two hours or more have passed since ingestion (Gosselin, Clinical toxicology of commercial products). Syrup of ipecac may be given promptly following ingestion.

NOTE TO PHYSICIAN

ANTIDOTE : No data available.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD :

Dangerous fire hazard when exposed to heat or flame.

Dangerous explosion Hazard when exposed to heat or flame.

Dangerous fire/severe explosion hazard in dust form when exposed to heat or flame.

Severe explosion Hazard when allowed to dry.

EXTINGUISHING MEDIA :

Flood with water, if no water available use dry chemical or earth.

(1993 Emergency Response Guidebook, RSPA P 5800.6).

Alcohol foam

(NFPA 325, Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, 1994)

FIREFIGHTING :

Do not move cargo or vehicle if cargo has been exposed to heat. For massive fire in cargo area, use unmanned hose holder or monitor nozzles ; if this is impossible, withdraw from area and let fire burn (1993 Emergency Response

Guidebook, RSPA P 5800.6, Guide Page 33).

Extinguish only if flow can be stopped ; use water in flooding amounts as fog, solid streams may not be effective. Cool container with flooding amounts of water, apply from as far a distance as possible. Evacuate to a radius of 2,500 feet for uncontrollable fire.

Water may be ineffective. (NFPA 325, Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, 1994)

HAZARDOUS COMBUSTION PRODUCTS :
Thermal decomposition products may include highly toxic fumes of hydrogen cyanide and toxic oxides of carbon and nitrogen.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL :
Shut off ignition sources. Do not touch spilled material. For small spills, flush area with flooding amounts of water. For large spills, wet down with water and dike for later disposal. No smoking, flames or flares in hazard area. Keep unnecessary people away.
Isolate hazard area and deny entry.

Tools used with nitrocellulose must be of nonferrous materials such as aluminum, copper, brass or wood.
Tools made of plastic material must not be used because of their tendency to produce static electricity.

SECTION 7 HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this substance
Store away from incompatible substances.
Drums should be stored in the upright position with the lids up. Storage should be segregated from incompatible materials such as strong acids and bases in an adequately ventilated area. Protect against exposure to excessive heat, and other

ignition sources (NFPA 49, Hazardous Chemicals Data, 1991).

Do not drop, slide or bang the drums. When emptying the drums, do not strike, hammer on the drum if the material does not flow freely.

Store indoors in a cool, dry and well ventilated place in original containers ;

recommended storage temperature is , < = 30 ℃

Ensure the damping agent is evenly distributed throughout the product (the damping agent tends migrate to the bottom of the drum).

Do not open or empty containers within the storage area.

Practice “first in/first out” (FIFO) inventory control, using the date printed on the container label. Do not store nitrocellulose for longer than a year.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS :

ISOPROPYL ALCOHOL (ISOPROPANOL)

- **400 ppm : OSHA TWA**
- **400 ppm : ACGIH TWA**
- **400 ppm : NIOSH recommended 10 hour TWA**

Measurement method : Chorcoal tube ; 2-butanol disulfide ; gas chromatography with flame ionization detection; (NIOSH # 1400, Alcohols l).

VENTILATION :

Provide local exhaust ventilation to meet published exposure limits.

Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.

EYE PROTECTION :

Employee must wear splash-proof or dust - resistant safety goggles to prevent eye contact with this substance.

Emergency eye wash : Where there is any possibility that an employee's eyes may be

exposed to this substance, the employer should provide an eye wash fountain within the immediate work area for emergency use.

CLOTHING :

Employee must wear appropriate protect (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

GLOVES :

Employee must wear appropriate protective gloves to prevent contact with this substance.

RESPIRATOR

The following respirators are recommended based on information found in the physical data, toxicity and health effects sections. They are ranked in order from minimum to maximum respiratory protection.

The specific respirator selected must be based on contamination levels found in the work place, must be based on the specific operation, must not exceed the working limits of the respirator and must be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA).

Any dust and mist respirator.

Any chemical cartridge respirator with organic vapor cartridge(s) with a dust and mist filter.

Any chemical cartridge respirator with organic vapor cartridge(s) in combination with a high-efficiency particulate filter.

Any gas mask with organic vapor canister (chin style or front- or back-mounted canister) with a dust and mist filter.

Any powered air-purifying respirator with high-efficiency particulate filter.

Any type `C' supplied-air respirator operated in the pressure-demand or other positive pressure or continuous-flow mode.

Any self-contained breathing apparatus.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS :

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid
Form : Fibrous or powder
Color : White
Odour : of damping alcohols
PH value : not applicable
Temperature of change of physical state : not applicable

Ignition temperature : ≥180 ℃

Boling point : Not applicable

Melting point : No data available.

Vapor pressure : No data available. But vapor pressure of isopropyl alcohol is 41.6mbar at 20℃.

Vapor density : Not applicable

Solvent solubility : Soluble in esters, ketones and glycol ethers.

Flash point of isopropyl alcohol in a closed Container : 12 ℃

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY (NITROCELLULOSE) :

Readily capable of detonation, explosive decomposition or explosive reaction at normal temperatures and pressures, especially if allowed to dry. Extreme risk of explosion by shock, friction, fire or other source of ignition when in the dry state. Deterioration during storage or aging may result in flameless decomposition which is self-sustaining and accelerative.

CONDITIONS TO AVOID :

Material is explosive when dry. Avoid contact with all sources of ignition. Avoid overheating and shock.

INCOMPATIBILITIES (NITROCELLULOSE, WET)

STRONG ACIDS : Decomposes and ignites

AMINES : Incompatible

STRONG BASES : Fire and explosion hazard

STRONG OXIDIZERS : Fire and explosion hazard.

HAZARDOUS DECOMPOSITION :

Thermal decomposition products may include highly toxic fumes of hydrogen cyanide and toxic oxides of carbon and nitrogen.

POLYMERIZATION :

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 11 TOXICOLOGICAL INFORMATION

Nitrocellulose itself is not toxic. Toxicity of the product depends on the damping agent. The following values can be given :

NITROCELLULOSE :

CARCINOGEN STATUS : None

ACUTE TOXICITY DATA : No data available

TARGET EFFECTS : No data available

ISOPROPYL ALCOHOL :

IRRITATION DATA : 500mg open skin-rabbit mild ; 100mg eye-rabbit severe ; 10mg eye-rabbit moderate ; 100mg/24hours eye-rabbit moderate.

TOXICITY DATA : 16000ppm/4hours inhalation-rat LCL0 ; 12800 ppm/3hours inhalation-mouse LCL0 ; 8000 ppm/8hours/20 weeks inhalation-rat TCL0 ; 12800mg/kg skin-rabbit LD50 ; 5272mg/kg oral-humanLDL0 ; 14432mg/kg oral-human TOL0 ; 3570mg/kg oral-human LDL0 ; 223mg/kg oral-human TOL0 ;13gm/kg oral-infant TOL0 ; 5045mg/kg oral-rat LD50 ; 3600mg/kg oral-mouse LD50 ; 6410mg/kg oral-rabbit

LD50 ; 1537mg/kg oral-dog LDL0 ; 6mg/kg subcutaneous-mammal LDL0 ; 6gm/kg subcutaneous-mouse LDL0 ; 1088mg/kg intravenous-rabbit LD50 ; 1509mg/kg intravenous-mouse LD50 ; 1184mg/kg intravenous-rabbit LD50 : 1963mg/kg intravenous-cat LDL0 ; 1024mg/kg intravenous-dog LDL0 ; 2735mg/kg intraperitoneal-rat LD50 ; 4477mg/kg intraperitoneal-mouse LD50 ; 667mg/kg intraperitoneal-rabbit LD50 ; 2560mg/kg intraperitoneal-guinea pig LD50 ; 3444mg/kg intraperitoneal-hamster LD50 ; mutagenic data (RTECS) ; reproductive

effects data (RTECS)

◆CARCINOGEN STATUS : None. Human inadequate evidence and Animal inadequate evidence (IARC Group 3).
◆LOCAL EFFECTS : Irritant-inhalation, eye
◆ACUTE TOXICITY LEVEL : Slightly toxic by inhalation and ingestion
◆TARGET EFFECTS : Central nervous system depressant
◆AT INCREASED RISK FROM EXPOSURE : Persons with liver disease, lung and kidney troubles.

HEALTH EFFECTS

INHALATION :

NITROCELLULOSE :
ACUTE EXPOSURE -No data available
CHRONIC EXPOSURE -No data available

ISOPROPYL ALCOHOL :
ACUTE EXPOSURE - Exposure of humans to 400 PPM has caused temporary irritation of the nose and pharynx.

SECTION 12 ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT RATING (0-4) : No data available

ACUTE AQUATIC TOXICITY : No data available

DEGRADABILITY : No data available

LOG BIOCONCENTRATION FACTOR (BCF) : No data available

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LOG OCTANOL/WATER PARTITION COEFFICIENT : No data available

SECTION 13 DISPOSAL CONSIDERATIONS

We recommended to dissolve small quantities of nitrocellulose prior to destruction as waste NC-lacquer and to incinerate them then.

Alternatively destroy by burning small quantities outside at a safe place in an open fire under competent control. For larger quantities contact manufacturer.

Waste disposal should be in accordance with existing state and local environmental regulations.

SECTION 14 TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION SHIPPING NAME -ID NUMBER, 49 CFR 172.101 : Nitrocellulose-UN 2556

US DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION 49 CFR 172.101 : 4.1 FLAMMABLE SOLID

US DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101 :
PG. 11

US DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101 AND SUBPARTE : 4.1 FLAMMABLE SOLID

SECTION 15 REGULATORY INFORMATION

TSCA INVENTORY STATUS : Y
CERCLA SECTION 103 (40CFR302.4) : N

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SARA SECTION 302 (40CFR355.30) : N
SARA SECTION 304 (40CFR355.40) : N
SARA SECTION 313 (40CFR372.65) : N
OSHA PROCESS SAFETY (29CFR1910.119) : N

CALIFORNIA PROPOSITION 65 : N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40 CFR 370.21)
ACUTE HAZARD : Y
CHRONIC HAZARD : Y
FIRE HAZARD : Y
REACTIVITY HAZARD : Y
SUDDEN RELEASE HAZARD :Y

SECTION 16 OTHER INFORMATION

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirement. The data does not signify any warranty with regard to the product's properties.