ARTEKYA, LTD.
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MATERIAL SAFETY DATA SHEET

1.IDENTIFICATION

Commercial Product Name: Nasiol-C
Product type: Glass&Ceramic Nano Coating Solution
Manufacturer: ARTEKYA LTD. CO.
24 Hour Environmental / Health Emergency
Telephone : 00905327694427
Transportation Emergency Phone Number 00902126701395

2.COMPOSITION INFORMATION

IDENTITY	%	CAS NO.	EC NO	EC INDEX NO	HAZARD CLASSIFICATION
-ETHANOL	>90	64-17-5	200-578-6	603-002-00-5	F;R11-R36
-WATER	<1	7732-18-5	231-791-2	-	
-COMMERCIALLY CONSERVED FORMULA	<10	-	-	-	

3.HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Appearance: colorless clear liquid. Flammable liquid and vapor. May cause central nervous system depression. Causes severe eye irritation. Causes respiratory tract irritation. Causes moderate skin irritation.
This substance has caused adverse reproductive and fetal effects in humans. Warning! May cause liver, kidney and heart damage.
Target Organs: Kidneys, heart, central nervous system, liver.
Potential Health Effects
Eye: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.
Skin: Causes moderate skin irritation. May cause cyanosis of the extremities.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea,

headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation. Chronic: May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage..

HMIS CODES HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0

4. FIRST AID MEASURES

SKIN CONTACT
Irritating to skin. Remove affected person from source of contamination.
Wash contaminated skin promptly with soap or mild detergent and water.
Remove clothing promptly, if soaked through, and wash as above.

EYE CONTACT
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Get medical aid. Gently lift eyelids and flush continuously with water.

INGESTION
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious

INHALATION
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Use extinguishing media appropriate for surrounding fire. Water, dry chemicals, (BC or ABC powder), CO2, sand, dolomite, etc. Foam.
DO NOT extinguish fire unless flow can be stopped first.

SPECIAL FIRE FIGHTING PROCEDURES
Keep upwind. Shut down all possible sources of ignition. Water may be ineffective but use to keep fire-exposed containers cool. Keep run-off water out of sewers and water sources. Dike for water control. Avoid water in straight hose stream; will scatter and spread fire. Use spray or fog nozzles. Cool containers exposed to flames with water from the side until well after the fire is out. Move container from fire area if it can be done without risk. If risk of water pollution occurs, notify appropriate authorities.

UNUSUAL FIRE & EXPLOSION HAZARDS

Makes explosive mixtures with air. Extremely flammable. May explode in a fire.
May travel considerable distance to source of ignition and flash back.

HAZARDOUS DECOMPOSITION PRODUCTS
Gases of: Carbon monoxide (CO)
Carbon dioxide (CO2)

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEANUP METHODS
In Case of small spill, dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
In case of large spill, flammable liqui keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth,sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined, areas; dike if needed.

7. HANDLING AND STORAGE

USAGE PRECAUTIONS
Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

STORAGE PRECAUTIONS
Flammable/combustible. Keep away from oxidizers, heat and flames.
May attack some plastics, rubber and coatings.
Keep in cool, dry, ventilated storage and closed containers.
Ground the container and transfer equipment to eliminate static electric sparks.

STORAGE CRITERIA
Flammable liquid storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

VENTILATION
Store in a well-ventilated area.

RESPIRATORS
No specific recommendation made, but respiratory protection must be used if the general level exceeds the Occupational Exposure Level (OEL).

PROTECTIVE GLOVES
Use protective gloves made of butyl rubber.

EYE PROTECTION
Wear approved chemical safety goggles where eye exposure is reasonably probable.
Contact lenses should not be worn when working with this chemical!

OTHER PROTECTION
Use engineering controls to reduce air contamination to permissible exposure level.
Provide eyewash station and safety shower.
Wear appropriate clothing to prevent repeated or prolonged skin contact.

9. PHYSICAL DATA

Form: Liquid
Colour: Whitish
Boiling Point: 78° @ 4mm
Specific Gravity: 0.81
Vapor Density (air=1): >1.54
% volatiles: %100
Autoignition temperature: 360°C
Odor: Alcoholic
Freezing Point: -90°C
Vapor Pressure, 42 mm Hg @20°C
Solubility in water: miscible
Evaporation rate: 3.0
Flash Point: 16.9 °C

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures. Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers. Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.
Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

TOXIC DOSE 1-LD50: 6980.00 mg/kg (oral rat)
HEALTH WARNINGS
Vapour is harmful on prolonged exposure or in high concentration.When in a concentration of more than 50%, Nasiol-C causes local mucosal lesions through dehydration and albumin precipitation. Absorption, which occurs swiftly from the gastrointestinal tract, causes euphoria, with subsequent dizziness, inebriation, paralysis, diminished reflex, excitability, cyanosis, narcosis and respiratory paralysis. Dangerous intolerance reactions and increased absorption occur through the simultaneous action of disulfiram, trichloroethylene,

tetra-chloromethane, nitrobenzene, carbon disulfide, aniline, lime-nitrogen, arsenic, lead and mercury. CNS depressant. Repeated exposure may cause chronic eye irritation. Defatting, drying and cracking of skin. Mild dermatitis, allergic skin rash. Swallowing concentrated chemical may cause severe internal injury.MEDICAL SYMPTOMS: Rhinitis (inflammation of the nasal mucous membranes). Upper
respiratory irritation. Skin irritation. Nausea, vomiting.
MEDICAL CONSIDERATIONS
Convulsive disorders, CNS problems.

12.ECOLOGICAL INFORMATION

Nasiol-C is biodegradable and has not been shown to interfere in any way with waste water treatment plants. In high concentrations it harms fish and plankton. 9,000 mg/l kills fish in 24 hours; threshold for deleterious effects in small crustaceans (Daphnia): upwards of 7,800 mg/l. Toxic threshold concentration: Pseudomonas putida upwards of 6,500 mg/l, Scenedesmus quadricauda upwards of 5,000 mg/l, Microsystis aeruginosa upwards of 1,450 mg/l. Fish toxicity: LC50>10,000 mg/l.

13. DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Ethanol Solution
LABEL FOR CONVEYANCE: Flammable Liquid 3
UN No: 1170
ROAD TRANSPORT:
- ADR CLASS No: 3
- ADR ITEM No: 3(b)
- ADR LABEL No: 3
- HAZCHEM CODE: 2YE
- CEFIC TEC(R) No: 32

RAIL TRANSPORT:
- RAIL TRANSPORT CLASS No: 3
- RAILROAD PT: 3b

SEA TRANSPORT:
- SEA TRANSPORT CLASS No: 3
- IMDG Page No: 3074
- SEA PACK GR: II

AIR TRANSPORT:
- AIR TRANSPORT CLASS No: 3
- AIR PACK GR: II

15. REGULATORY INFORMATION

European/International Regulations and (GHS / CLP Regulation Statements)
European Labeling in Accordance with EC Directives
Hazard Symbols: F
Risk Phrases:
R11 (H225):Highly flammable.
R16: Explosive when mixed with oxidizing substance.
R66 (EUH066): Repeated exposure may cause skin dryness or cracking.
R67 (H336): Vapours may cause drowsiness and dizzines.
Safety Phrases:
S43 : In case of fire, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. for large fires, use water spray, fog, or alcohol-resıstant foam. If water increases the risk, add - never use water.
S16 (P210): Keep away from sources of ignition - No smoking.
S33 (P243): Take precautionary measures against static discharges.
S7 (P233): Keep container tightly closed.
S9 (P403): Keep container in a well-ventilated place.
S2 (P102): Keep out of the reach of children.
S62 (P301 +P331 + P310): If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

EU AND CLP LABELS

Highly Flammable

Warning

THE GERMAN WATER HAZARD CLASSES
WGK (Water Danger/Protection) CAS# 64-17-5: 0 CAS# 7732-18-5: No information available.

US FEDERAL
TSCA
CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b

None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 64-17-5: acute, chronic, flammable.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this
product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic
Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota,
Massachusetts.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
WARNING: This product contains Ethyl alcohol, a chemical known to the state of California to cause birth defects or
other reproductive harm. California No Significant Risk Level: None of the chemicals in this product are listed.

Canada - DSL/NDSL
CAS# 64-17-5 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.
Canada – WHMIS This product has a WHMIS classification of B2, D2A, D2B.
Canadian Ingredient Disclosure List CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits
CAS# 64-17-5: OEL-AUSTRALIA:TWA 1000 ppm (1900 mg/m3)
OEL-BELGIUM:TWA 1000 ppm (1880 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 1000 mg/m3;STEL 5000 mg/m3

OEL-DENMARK:TWA 1000 ppm (1900 mg/m3)
OEL-FINLAND:TWA 1000 ppm(1900 mg/m3);STEL 1250 ppm (2400 mg/m3)
OEL-FRANCE:TWA 1000 ppm (1900 mg/m3);STEL 5000 pp
OEL-GERMANY:TWA 1000 ppm (1900 mg/m3)
OEL-HUNGARY:TWA 1000 mg/m3;STEL 3000 mg/m3
OEL-THE NETHERLANDS:TWA 1000 ppm (1900 mg/m3)
OEL-THE PHILIPPINES:TWA 1000 ppm (1900 mg/m3)
OEL-POLAND:TWA 1000 mg/m3 OEL-RUSSIA:STEL 1000 mg/m3
OEL-SWEDEN:TWA 1000 ppm (1900 mg/m3)
OEL-SWITZERLAND:TWA 1000 ppm (1900 mg/m3)
OEL-THAILAND:TWA 1000 ppm (1900 mg/m3)
OEL-TURKEY:TWA 1000 ppm (1900 mg/m3)
OEL-UNITED KINGDOM:TWA 1000 ppm (1900 mg/m3) JAN9
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

16. ADDITIONAL INFORMATION

ISSUE DATE Nasiol-C: 11/09/2011
Revision #1 Date: 19/08/2013
Revision #2 Date: 19/12/2013

The information contained in this document has been taken from reference materials and/or Artekya, Inc. test data. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Artekya ltd. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet
is not intended to constitute a basis for product specifications.

Prepared by R&D dep.

Revised by Cem Dursunoğlu (Code Art01)
(TSE Approved MSDS Specialist)