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## MATERIAL SAFETY DATA SHEET

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### 1. PRODUCT AND COMPANY IDENTIFICATION

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Product Name: NH1001 YELLOW INK

Product Use: Ink-Jet Printing Ink

#### Company Identification

##### MANUFACTURER/DISTRIBUTOR

DuPont Ink Jet and Specialty Colorants  
DuPont Performance Coatings  
Barley Mill Plaza  
Wilmington, DE (USA)

##### PHONE NUMBERS

Product, Safety, Health and  
Environmental Information : 1-302-695-9682 (8 a.m.-5 p.m. ET, M-F, U.S.A)  
Transport Emergency : CHEMTREC: 1-800-424-9300 (24 hours, U.S.A)  
Medical Emergency : 1-800-441-3637 (24 hours, U.S.A.)

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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#### Components (% by weight)

<u>Material</u>	<u>CAS Number</u>	<u>%</u>
Water	7732-18-5	55-78
2-Pyrrolidone	616-45-5	10-15
Humectant	**	5-10
Aliphatic Alcohol	**	5-10
Yellow Dye	**	1-5
*Inorganic Nitrate	**	1-5

\*Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

#### Components (Remarks)

\*\*The specific identity for each component not identified by a CAS Registry Number is withheld as a trade secret.

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### 3. HAZARDS IDENTIFICATION

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#### Potential Health Effects

THIS PRODUCT CAN BE USED SAFELY WHEN USED AS DIRECTED AND WHEN APPLICABLE SAFETY PRECAUTIONS ARE FOLLOWED.

#### POTENTIAL HEALTH EFFECTS FROM PRODUCT

Potential routes of overexposure to this product are skin contact, eye contact and inhalation of vapor.

Ingestion is not expected to be a significant route of exposure for this product under normal use conditions.

There is no toxicity data available for this specific formulation. Any potential hazards are presumed to be due to exposure to the components.

#### ADDITIONAL HEALTH EFFECTS

Since this mixture has not been tested as a whole to determine the hazards by all routes of exposure, information is provided for each hazardous component of the mixture to meet requirements of OSHA's Hazard Communication Standard (29 CFR 1910.1200). The effects noted occur from exposure to the pure component unless otherwise noted.

#### INFORMATION FOR COMPONENTS

##### 2-PYRROLIDONE

Eye Contact - Contact with eyes may result in irritation.

Skin Contact - Contact with the skin may result in irritation.

Inhalation - Inhalation may result in respiratory irritation.

Ingestion - Ingestion may result in gastric disturbances.

Chronic Overexposure Effects - Developmental toxicity was seen in the offspring of rats at doses that were maternally toxic.

##### HUMECTANT

Eye Contact - May cause eye irritation. Symptoms of exposure may include eye irritation or burning sensation.

Skin Contact - Prolonged or repeated contact may dry skin and cause irritation. Symptoms of exposure may include drying, cracking or inflammation of skin.

Inhalation - May cause respiratory tract irritation. Symptoms of exposure may include nasal discharge, hoarseness, coughing, chest pain and breathing difficulty.

Ingestion - Essentially non-toxic.

Medical Conditions which may be Aggravated by Exposure - Significant exposure may adversely affect people with acute or chronic disease of the respiratory tract, skin or eyes.

#### ALIPHATIC ALCOHOL

Eye Contact - May cause eye irritation.

Skin Contact - May cause skin irritation.

Effects of Overexposure - Excessive exposure may cause gastrointestinal disturbances, nausea, headache and vomiting.

#### INORGANIC NITRATE

Eye Contact - May cause eye irritation with discomfort, tearing or blurring of vision.

Skin Contact - May cause skin irritation with discomfort or rash. Evidence suggests that skin permeation can occur in amounts capable of producing the effects of systemic toxicity. There are no reports of human sensitization.

Inhalation - May cause irritation of the upper respiratory passages with coughing and discomfort.

Ingestion - Ingestion may cause methemoglobinemia (reduced oxygen carrying capacity of the blood) with headache, weakness or cyanosis (bluish discoloration of the skin) possibly progressing to dizziness, incoordination, shortness of breath, increased pulse rate and loss of consciousness.

#### Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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## 4. FIRST AID MEASURES

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### First Aid

#### INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

#### SKIN CONTACT

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Consult a physician. Wash contaminated clothing before reuse.

#### EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

#### INGESTION

Ingestion is not an expected route of exposure during normal use of the product. If ingested, consult a physician.

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## 5. FIRE FIGHTING MEASURES

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#### Flammable Properties

Flash Point	: >93.3 °C (>200 °F)
Method	: Closed Cup
Approximate Flammable Limits in Air, % by Volume	
LEL	: Not Available
UEL	: Not Available
Autoignition Temperature	: Not Available

Product is a nonflammable water-based solution.

Hazardous combustion products (gases/vapors) produced in fire can include carbon monoxide, carbon dioxide, nitrogen oxides and smoke.

#### Extinguishing Media

Use media appropriate for surrounding material.

#### Fire Fighting Instructions

This product is not flammable. Use normal firefighting procedures for the area.

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## 6. ACCIDENTAL RELEASE MEASURES

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#### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.



Initial Containment

Dike spill.

Spill Clean Up

Soak up with absorbent material.

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## 7. HANDLING AND STORAGE

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Handling (Personnel)

Avoid contact with eyes, skin, or clothing.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of the material.

RESPIRATORS

Respirators are not needed for normal use.

PROTECTIVE CLOTHING

If there is potential for significant dermal contact wear appropriate impervious clothing and gloves.

Applicable Exposure Limits and Exposure Data

WATER

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: None Established
LD <sub>50</sub> (rat, oral)	: >90 mL/kg (RTECS)
LC <sub>50</sub> (rat, inhalation/4 hr.)	: No data available

2-PYRROLIDONE

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 10 ppm, 35 mg/m <sup>3</sup> , 8 & 12 Hr. TWA
LD <sub>50</sub> (rat, oral)	: >5,000 mg/kg (supplier)
LC <sub>50</sub> (rat, inhalation/4 hr.)	: No data available

HUMECTANT  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : None Established  
LD<sub>50</sub> (rat, oral) : >14,000 mg/kg (supplier)  
LC<sub>50</sub> (rat, inhalation/4 hr.) : >850 mg/m<sup>3</sup> (supplier)

ALIPHATIC ALCOHOL  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : None Established  
LD<sub>50</sub> (rat, oral) : 10,000 mg/kg (supplier)  
LD<sub>50</sub> (rabbit, dermal) : >20 mL/kg (RTECS)  
LC<sub>50</sub> (rat, inhalation/4 hr.) : No data available

YELLOW DYE  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : None Established  
LD<sub>50</sub> (rat, oral) : >2000 mg/kg  
LC<sub>50</sub> (rat, inhalation/4 hr.) : No data available

INORGANIC NITRATE  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : None Established  
LD<sub>50</sub> (rat, oral) : 1,267 - 4,242 mg/kg (supplier)  
LC<sub>50</sub> (rat, inhalation/4 hr.) : No data available

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Physical Data

Form : Liquid  
Color : Yellow  
Odor : Slight  
Solubility in Water : Miscible  
pH : About 8  
Specific Gravity : About 1

Other Information

Flash Point	: >93.3 °C (>200 °F)
Method	: Closed Cup
Approximate Flammable Limits in Air, % by Volume	
LEL	: Not Available
UEL	: Not Available
Autoignition Temperature	: Not Available

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## 10. STABILITY AND REACTIVITY

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### Chemical Stability

Stable at normal temperatures and storage conditions.

### Incompatibility with Other Materials

None reasonably foreseeable.

### Decomposition

Decomposition does not occur during normal use.

### Polymerization

Polymerization will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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### Animal Data

No data available for product.

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicological Information

No data available for product.

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### 13. DISPOSAL CONSIDERATIONS

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#### Waste Disposal

DO NOT DISCARD INTO ANY SEWERS, INTO ANY BODY OF WATER, OR ON THE GROUND. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local laws and regulations.

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### 14. TRANSPORTATION INFORMATION

(Not meant to be all inclusive)

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DOT (Domestic Surface, U.S.A.)	: Not regulated
ICAO/IATA (Air)	: Not regulated
IMO/IMDG (Ocean)	: Not regulated

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### 15. REGULATORY INFORMATION

(Not meant to be all inclusive - selected regulations represented)

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#### U.S. Regulations

##### Federal Regulations

TSCA Inventory Status - All components of this product are listed, or exempt from listing, on the TSCA 8(b) chemical inventory.

TSCA Section 12(b) Export Notification - This product can contain:

None

##### State Regulations

###### State Right-To-Know

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM (California Proposition 65)

Ethylene Oxide (75-21-8)	<0.05 ppm
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The above are trace impurities that can occur in the product.



### European Union Regulations

EU Inventory Status - All components of this product are listed, or are exempt from listing, on the EINECS chemical inventory.

Transport Information - This product is not classified as dangerous within the meaning of transport regulations.

Labeling - This product does not need to be labeled in accordance with EC-Directive 1999/45/EC.

### Switzerland

Switzerland VOC Regulations (Ordinance 814.018, *Verordnung über die Lenkungsabgabe auf flüchtigen organischen Verbindungen*, as of 28 December 2000)

This product is exempt from Swiss VOC regulations.

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## 16. OTHER INFORMATION

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### HMIS® Rating

Health	: 1
Flammability	: 0
Reactivity	: 0

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

### MSDS Contact Information

Global Product Stewardship and Regulatory Affairs  
DuPont Ink Jet and Specialty Colorants  
DuPont Performance Coatings  
Barley Mill Plaza  
Wilmington, DE (U.S.A.)  
1-302-695-9682 (U.S.A.)

### Revision History

14 September 2005	New MSDS
19 October 2005	Product name change

### Key

ACGIH	American Conference of Governmental Industrial Hygienists
AEL	Acceptable Exposure Limit (DuPont)

Cmpds	Compounds
DOT	Department of Transportation (U.S.A.)
ET	Eastern Time (U.S.A.)
EU	European Union
HMIS®	Hazardous Material Information System (National Paint and Coatings Association)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IEL	Indicative Exposure Limit (EU Directive 2000/39/EC)
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LEL or LFL	Lower Explosive Limit or Lower Flammable Limit
M-F	Monday through Friday
NA	North America
NIOSH	National Institute of Occupational Safety and Health (U.S.A.)
NOHSC	National Occupational Health and Safety Commission (Worksafe Australia)
NOS	Not Otherwise Specified
NTP	National Toxicology Program (U.S.A.)
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration (U.S.A.)
PEL	Permissible Exposure Limit
RTECS	Registry of Toxic Effects of Chemical Substances (NIOSH)
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act (U.S.A)
TWA	Time-weighted Average
UEL or UFL	Upper Explosive Limit or Upper Flammable Limit
U.S.A.	United States of America
VOC	Volatile Organic Compound(s)
WEEL	Workplace Environmental Exposure Level

End of MSDS