Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Blue [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067446A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	5mg/m3 TWA	Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Blue.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubulity in water : Soluble.
Evaporation rate : Not available.
Volatile : 84-87%

10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>2000mg/kg-Rat	Coloring agent
	>5000mg/kg-Rat	Aluminum paste
	>=5000mg/kg-Rat	Resin
	5000mg/kg-Dog, 11700mg/kg-Mouse	2-Propanol, 1-methoxy-
	2200mg/kg-Rabbit, 5846mg/kg-Mouse	Triethanolamine
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine

Specific effects	IARC Group 3	Triethanolamine

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Red [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067447A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy- / Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL 5mg/m3 TWA	2-Propanol, 1-methoxy- Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
JAIH	2mg/m3(Respirable fraction), 8mg/m3(Total dust)	Coloring agent
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Red.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubility in water : Soluble.
Evaporation rate : Not available.
Volatile : 88-91%

10. STABILITY AND REACTIVITY

Stability : Stability.
Hazardous reactions : Will not occur.
Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy- / Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine / Coloring agent

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>5000mg/kg-Rat	Aluminum paste
	>=5000mg/kg-Rat	Resin / Coloring agent
	5000mg/kg-Dog,	2-Propanol, 1-methoxy-
	2200mg/kg-Rabbit,	Triethanolamine
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine
Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
	irritation	Coloring agent
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
	redness,swelling	Coloring agent
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine
	nausea,vomiting	Coloring agent
Specific effects	IARC Group 3	Triethanolamine

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Green [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067448A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	5mg/m3 TWA	Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Green.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubulity in water : Soluble.
Evaporation rate : Not available.
Volatile : 84-87%

10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>2000mg/kg-Rat	Coloring agent
	>5000mg/kg-Rat	Aluminum paste
	>=5000mg/kg-Rat	Resin
	5000mg/kg-Dog, 11700mg/kg-Mouse	2-Propanol, 1-methoxy-
	2200mg/kg-Rabbit, 5846mg/kg-Mouse	Triethanolamine
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation dehydration	Aluminum paste Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine

Specific effects	IARC Group 3	Triethanolamine

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

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1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Violet [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067449A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	Coloring agent / 2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL 5mg/m3 TWA	2-Propanol, 1-methoxy- Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
JAIH	2mg/m3(Respirable fraction), 8mg/m3(Total dust)	Coloring agent
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Violet.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubility in water : Soluble.
Evaporation rate : Not available.
Volatile : 87-90%

10. STABILITY AND REACTIVITY

Stability : Stability.
Hazardous reactions : Will not occur.
Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	Coloring agent / 2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
miscellaneous decomposition products.	Coloring agent
oxides of nitrogen.	Triethanolamine

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>5000mg/kg-Rat	Aluminum paste
	>=5000mg/kg-Rat	Resin / Coloring agent
	5000mg/kg-Dog, 11700mg/kg-Mouse	2-Propanol, 1-methoxy-
	2200mg/kg-Rabbit, 5846mg/kg-Mouse	Triethanolamine
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation	Coloring agent
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine

Specific effects	IARC Group 3	Triethanolamine

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

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1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Pink [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067450A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resins	Registered	Registered	Polymer Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Glycerine	56-81-5	Registered	2002895	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.
Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
oxidizing materials	Resin / Coloring agent / 2-Propanol, 1-methoxy-
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
acids, bases, oxidizing materials, metal oxides, peroxides, reducing agents	Glycerine
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
	5mg/m3 TWA(respirable dust fraction), 15mg/m3 TWA(total dust)	Glycerine
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	10mg/m3 TWA	Glycerine
	5mg/m3 TWA	Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Pink.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubulity in water : Soluble.
Evaporation rate : Not available.
Volatile : 82-85%

10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals,	1,2-Propanediol
oxidizing materials	Resin / 2-Propanol, 1-methoxy- / Coloring agent
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
acids, bases, oxidizing materials, metal oxides, peroxides, reducing agents	Glycerine
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, cyanides, aldehydes, corrosive acrolein, various organic fragments.	Resin
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive / Glycerine
oxides of nitrogen.	Triethanolamine

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	1000mg/kg-Mouse	Resin
	>=5000mg/kg-Rat	Resin
	>5000mg/kg-Rat	Aluminum paste
	5000mg/kg-Dog, 11700mg/kg-Mouse	2-Propanol, 1-methoxy-
	4090mg/kg-Mouse	Glycerine
	2200mg/kg-Rabbit, 5846mg/kg-Mouse	Triethanolamine
	2950mg/kg-Mouse	Coloring agent
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
	>570mg/m3-1H-Rat	Glycerine
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>10000mg/kg-Rabbit	Glycerine
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache irritation,cough irritation,nausea irritation,difficulty breathing sore throat,difficulty breathing	1,2-Propanediol Resin / Aluminum paste 2-Propanol, 1-methoxy- Glycerine Triethanolamine
Skin contact	irritation,allergic reaction mechanical abrasion,irritation irritation,itching sensitization irritation,dry irritation,redness burns,corrosive	1,2-Propanediol Resin Aluminum paste Additive 2-Propanol, 1-methoxy- Glycerine / Triethanolamine Coloring agent
Eye contact	irritation,pain irritation irritation,eye damage irritation,tearing tearing,stinging irritation,corneal swelling	1,2-Propanediol Resin Aluminum paste 2-Propanol, 1-methoxy- Glycerine Triethanolamine
Ingestion	allergic reaction,vomiting irritation,digestive disorders difficulty breathing,nausea nausea,vomiting burns,gastrointestinal irritation	1,2-Propanediol Aluminum paste 2-Propanol, 1-methoxy- Glycerine / Coloring agent Triethanolamine
Specific effects	IARC Group 3	Resin / Triethanolamine

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Glycerine / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

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1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Gold [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067451A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agents	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy- / Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
	15mg/m3 PEL (Nuisance Dust)	Coloring agent
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	5mg/m3 TWA	Triethanolamine
	10mg/m3(Nuisance particulate)	Coloring agent
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Gold.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubility in water : Soluble.
Evaporation rate : Not available.
Volatile : 88-91%

10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo	1,2-Propanediol
acids, combustible materials, oxidizing	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy- / Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine
oxides of nitrogen, halogenated compounds.	Coloring agent

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>5000mg/kg-Rat	Aluminum paste / Coloring agent
	>=5000mg/kg-Rat	Resin
	5000mg/kg-Dog,	2-Propanol, 1-methoxy-
	11700mg/kg-Mouse	
	2200mg/kg-Rabbit,	Triethanolamine
	5846mg/kg-Mouse	
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
	irritation	Coloring agent
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
	allergic contact dermatitis	Coloring agent
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine
	nausea,vomiting	Coloring agent

Specific effects	IARC Group 3	Triethanolamine

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.
Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

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1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Silver [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067452A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.
Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	5mg/m3 TWA	Triethanolamine
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Silver.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubulity in water : Soluble.
Evaporation rate : Not available.
Volatile : 88-91%

10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>5000mg/kg-Rat	Aluminum paste
	5000mg/kg-Dog, 11700mg/kg-Mouse	2-Propanol, 1-methoxy-
	>=5000mg/kg-Rat	Resin
	2200mg/kg-Rabbit, 5846mg/kg-Mouse	Triethanolamine
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation dehydration	Aluminum paste Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine

Specific effects	IARC Group 3	Triethanolamine

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

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1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: UM-120NM Bronze [uni-ball Signo NOBLE METAL]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.
Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN
Telephone number : 03-3458-6281 Telefax number : 03-3450-0363
Telex number : 2422337 MBPENC J.

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006
File No. : 067453A Rev. 2.5.01.02

2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
1,2-Propanediol	57-55-6	Registered	2003380	10- 30
2-Propanol, 1-methoxy-	107-98-2	Registered	2035391	< 10
Coloring agent	Registered	Registered	Registered	< 10
Resin	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Polymer Registered	< 10
Aluminum paste	7429-90-5	Registered	2310723	< 10
Triethanolamine	102-71-6	Registered	2030498	< 10

Other parts : Other parts are excluded from 'chemical substances'.

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Not available.

4. FIRST-AID MEASURES

Inhalation:
Not applicable.
(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

Skin contact:
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eye contact:
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion:
If swallowed, seek medical advice, and show the MSDS to the physician then.
[Ink quantity of product : about 1.0-1.3g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.
Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : The Products is no flammable.
Use extinguishing agents appropriate for surrounding fire.
Avoid inhalation of material or combustion by-products.
Stay upwind and keep out of low areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Not available.
Environmental precautions : Do not wash away into shower or water way.
Methods for cleaning up : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Keep separated from incompatible substances.

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Don't shake.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available.
Safe handling advice : Not available.
Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing agents	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy- / Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3(pyro powders)	Aluminum paste
	15mg/m3 PEL (Nuisance Dust)	Coloring agent
ACGIH	10mg/m3 TWA(metal perticulate), 5mg/m3 TWA (pyro powders)	Aluminum paste
	100ppm TWA, 150ppm STEL	2-Propanol, 1-methoxy-
	5mg/m3 TWA	Triethanolamine
	10mg/m3(Nuisance particulate)	Coloring agent
EC	100ppm(375mg/m3) TWA, 150ppm(568mg/m3) STEL	2-Propanol, 1-methoxy-
UK	150ppm(474mg/m3) TWA(total(vapor and pariclulates)), 10mg/m3 TWA(particlulates)	1,2-Propanediol

Personal protective equipment : Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state and form : Middle viscous liquid.
Colour : Bronze.
Odour : None odour.
pH : 8.0-8.5
Boiling point : Not available. [Water/ 100 C]
Melting point : <-10 C
Flash point : Not applicable. [2-Propanol, 1-methoxy-/ 32 C]
Autoignition temperature : Not applicable. [2-Propanol, 1-methoxy-/ 270 C]
Explosion limits : Not applicable.
[Lower flammable limit / 1.6% , Upper flammable limit / 13.8% <2-Propanol, 1-methoxy->]
Density : 1.1-1.2 / 25 C
Vapour density (air=1) : Not available. [2-Propanol, 1-methoxy-/ 3.1]
Solubility in water : Soluble.
Evaporation rate : Not available.
Volatile : 88-91%

10. STABILITY AND REACTIVITY

Stability : Stability.
Hazardous reactions : Will not occur.
Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

Materials to avoid : (Information of components.)

acids, bases, combustible materials, halo carbons, metals, metal salts, oxidizing materials, reducing	1,2-Propanediol
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal	Aluminum paste
strong oxidizers	Additive
oxidizing materials	2-Propanol, 1-methoxy-
	Coloring agent
acids, metals, oxidizing materials	Triethanolamine

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
corrosive acrolein.	Additive
oxides of nitrogen.	Triethanolamine / Coloring agent

11.TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	20000mg/kg-Rat	1,2-Propanediol
	>5000mg/kg-Rat	Aluminum paste / Coloring agent
	>=5000mg/kg-Rat	Resin
	5000mg/kg-Dog,	2-Propanol, 1-methoxy-
	11700mg/kg-Mouse	
	2200mg/kg-Rabbit,	Triethanolamine
	5846mg/kg-Mouse	
Inhalation LC50	10000ppm-5H-Rat	2-Propanol, 1-methoxy-
Skin LD50	20800mg/kg-Rabbit	1,2-Propanediol
	13000mg/kg-Rabbit	2-Propanol, 1-methoxy-
	>16mL/kg-Rat	Triethanolamine

Local effects	Irritant;inhalation	Aluminum paste
	dehydration	Additive
	Irritant;inhalation, skin, eye	2-Propanol, 1-methoxy-
	Irritant;skin, eye	Triethanolamine

Chronic toxicity and long term toxicity

Repeated or prolonged contact may cause skin sensitization.	1,2-Propanediol / Triethanolamine
Lungs may be affected by repeated or prolonged exposure to dust particules. The substance may have effects on the nervous system, resulting in impaired functions.	Aluminum paste
The liquid defats the skin.	2-Propanol, 1-methoxy-

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	nausea,headache	1,2-Propanediol
	irritation,cough	Aluminum paste
	irritation,nausea	2-Propanol, 1-methoxy-
	sore throat,difficulty breathing	Triethanolamine
	irritation	Coloring agent
Skin contact	irritation,allergic reaction	1,2-Propanediol
	irritation,itching	Aluminum paste
	sensitization	Additive
	irritation,dry	2-Propanol, 1-methoxy-
	irritation,redness	Triethanolamine
	allergic contact dermatitis	Coloring agent
Eye contact	irritation,pain	1,2-Propanediol
	irritation,eye damage	Aluminum paste
	irritation,tearing	2-Propanol, 1-methoxy-
	irritation,corneal swelling	Triethanolamine
Ingestion	allergic reaction,vomiting	1,2-Propanediol
	irritation,digestive disorders	Aluminum paste
	difficulty breathing,nausea	2-Propanol, 1-methoxy-
	burns,gastrointestinal irritation	Triethanolamine
	nausea,vomiting	Coloring agent

Specific effects	IARC Group 3	Triethanolamine

Creation Date : Nov. 18, 2005
Revision Date : Apr. 27, 2006

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

14. TRANSPORT INFORMATION

HS Code : 960810

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS)

: Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

EU labeling

F;R15-17	: Aluminum paste
Xi;R36,R38	: Resin
R10	: 2-Propanol, 1-methoxy-

R10 : Flammable.
R15 : Contact with water liberaters extremely flammable gases.
R17 : Spontaneously flammable in air.
R36 : Irritating to eyes.
R38 : Irritating to skin.

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over : 1,2-Propanediol / Aluminum paste / 2-Propanol, 1-methoxy- / Triethanolamine

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products
at the data : (April 27, 2006). They are given quite sincerely.
Moreover the attention of the users is drawn on the risks possibly taken,
when a product is used for other utilization than these which it is intended.