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**ShinHan**  
ShinHan Art Materials Inc.

**01723-XXXX**

## Material Safety Data Sheet

### 1. Identity Information

Products' Name: SHINHAN ARTISTS' WATER COLORS

|                                   |  |
|-----------------------------------|--|
| Manufacturer's Name:              | ShinHna Art Materials Inc.   |
| Address:                          | ShinHan Bldg, 16-24 Bulkwang-Dong<br>Eunpyung-Gu, Seoul, South Korea |
| Department:                       | R & D  |
| Telephone Number for information: | +82 2 357 2651-4   |
| Fax Number:                       | +82 2 357 7481   |
| Preparer:                         | Kyung Tae, Kim   |
| Date Prepared                     | Jan 30, 2008   |

### 2. Composition / Ingredients

Substance/Mixture: Mixture

| Components   | (Specific Chemical Identity, Common Name (s)) |                   |
|--------------|---|-------------------|
| Colorant     | (Pigment)*                                    |                   |
| Binder       | (Arabic Gum)**                                | Cas No. 9000-01-5 |
| Dispersant   | (Sodium Salt of Polymeric Carboxylic Acid)*** | Cas No.           |
| Moisturizer  | (Glycerine)                                   | Cas No. 56-81-5   |
| Preservative | (Benzisothiazoline)                           | Cas No. 2634-33-5 |

\*,\*\* and \*\*\* are Main ingredients

\*:Individuals of pigments are shown on Table 1 of appendix.

\*\*\* are not always used.

UN Class: Not Applicable(N.A.)

### 3. Physical / Chemical Characteristics

|                         |   |
|-------------------------|---|
| Appearance and Odor:    | Colored Paste with unique odor                |
| Boiling Point:          | Approx. 100.                                  |
| Specific Gravity(H2O=1) | 1.10~1.95(Av. 1.43)                           |
| Solubility in water     | Can be diluted. Can be influenced after dried |

### 4. Fire and Explosion Hazard Data

|  |  |
|--|--|
| Flash Point, Ignition Point:           | N/A  |
| Flammability:                          | N/A  |
| Stability and Reactivity:              | Stable under normal state  |
| Incompatibility(Materials to avoid):   | None   |
| Hazardous Decomposition or Byproducts: | No thermal decomposition when stored and handled correctly.<br>In case of fire, formation of carbon dioxide and oxide of metal according to pigment. |
| Unusual Fire and Explosion Hazards:    | Material will not support combustion unless the water has evaporated.  |

### 5. Fire-Fighting Measures

|                      |  |
|----------------------|--|
| Method:              | Regular  |
| Extinguishing Media: | Water(Foam, Dry powder and Carbon dioxide, if necessary) |

### 6. Hazardous Information

|                          |   |
|--------------------------|---|
| Primary Routes of Entry: | Dermal, eye contact, inhalation, swallowing |
| Eye irritation:          | Irritant to some person                     |

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Skin irritation: Irritant by repeated or prolonged contact and may cause inflammation.  
 Inhalation Toxicity: Not been certified.  
 Oral Toxicity: Although some of raw materials are pointed as some toxicity, the toxic act of them are not acute.

On pigments, to be noted:

Colors named with Cadmiums: Contains Cadmium ingredient, influences to fetus, induce kidney or lungs damage.

Cobalt Blue, Cerulean Blue, Verditer Blue: Contains soluble Cobalt, induce anemia and heart or lungs damage.

Peach Black: Soluble Copper, induce anemia

Fish Toxicity: Not Not been certified

### 7. First-Aid Measures

In case of eye contact, rinse with plenty of water and if necessary consult an eye specialist.  
 Upon skin contact, wash with plenty of water soap or other non-irritating cleansing agents.  
 In case of swallowing, drink plenty of water. Induce vomiting. If you feel unwell, seek medical advice.  
 Inhalation is N/A.

### 8. Regulations

Danger Class: N.A.(Not flammable liquid)  
 Low: Fire Low: ditto

### 9. Precautions for Safe Handling and Use

Exposure Controls/Personal Protection: Avoid invasion to the eyes or body. Avoid prolonged or repeated contact with skin. Wash mouth or hands well after use.  
 Precautions for Storing and Transport: None, especially  
 Disposal Considerations: Dispose in accordance with national and/or local regulations.

### 10. Other Information

All information contained herein is for references and guidance for normal use and not for all conceivable conditions of handling and use.  
 The responsibility for irregular use belongs to user individuals.  
 All information are under our knowledge of today and not secure the perfection.  
 All information may change according to circumstances.

### Appendix

Table 1 Pigments of artists' Water Colors

| Name             | C.I. Name         | Pigment(Chemically indicated)                              |
|------------------|-------------------|--|
| BLUE GREY        | PW6, PB15:3, PB29 | Titanium Dioxide, Copper Phthalocyanine, Complex of Silica |
| BORI BLACK       | PBk9              | Bone Black   |
| BRIGHT ROSE      | BR12, BV11        | Flourescent Pigment, Tetrachlorozincate                    |
| BRIGHT VIOLET    | BV15, BV7         | Flourescent Pigment, Flourescent Pigment                   |
| BRILLIANT ORANGE | PO16              | Disazo Pigment   |
| BRILLIANT PINK   | PW6, PR209        | Titanium Dioxide, Quinacridone Pigment                     |
| BROWN            | PR101, PBr25      | Iron Oxide, Quinacridone Pigment                           |
| BROWN MADDER     | PR83, PY83, PBr25 | Alizarin, Disazo Pigment, Quinacridone Pigment             |
| BROWN RED        | PBr25             | Quinacridone Pigment                                       |
| BURNT SIENNA     | PR101, PY83       | Iron Oxide, Disazo Pigment                                 |

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|                       |                          |   |
|-----------------------|--------------------------|---|
| BURNT UMBER           | PY98, PY98               | Azo Pigment, Azo Pigment  |
| CADMIUM RED DEEP      | PR108, PR112             | Cadmium Sulfo-Sselenide, Azo Pigment  |
| CADMIUM RED ORANGE    | PO20                     | Cadmium Sulfo-Sselenide   |
| CADMIUM YELLOW DEEP   | PY35, PO20               | Cadmium Zinc Sulfide, Cadmium Sulfo-Selenide  |
| CADMIUM YELLOW ORANGE | PY35, PO20               | Cadmium Zinc Sulfide, Cadmium Sulfo-Selenide  |
| CARMINE               | PR83, PR63:1             | Alizarin, Azo Pigment   |
| CERULEAN BLUE HUE     | PB15:3                   | Copper Polychloro Phthalocyanine  |
| CHINESE WHITE         | PW6                      | Titanium Dioxide  |
| COBALT BLUE           | PB28                     | Cobalt Aluminate  |
| COBALT BLUE HUE       | PB29, PB15:3, PB66       | Complex of Silica, Copper Phthalocyanine, Indigo Pure                                   |
| COBALT GREEN          | PY53, PB36, PG7, PB28    | Titanium Dioxide, Cobalt Chromite   |
| CRIMSON LAKE          | PV32, PR122, PR83        | Copper Polychloro Phthalocyanine, Cobalt Aluminate                                      |
| DAVY'S GREY           | PW6, PBk31, PBk 11, PG17 | Benzimidazolone, Quinacridone Pigment, Alizarine  |
| EMERALD GREEN NOVA    | PW6, PG7, PY3            | Titanium Dioxide, Perylene, Iron Oxide, Chromium Oxide                                  |
| GREEN DEEP            | PG7, PY3                 | Titanium Dioxide, Copper Polychloro Phthalocyanine, Azo Pigment                         |
| GREENISH YELLOW       | PY17, PG8, PY74          | Copper Polychloro Phthalocyanine, Azo Pigment   |
| HOOKER'S GREEN        | PG8, PG7                 | Azo Pigment, Nitrosonaphthol, Azo Pigment   |
| HORIZON BLUE          | PW6, PG7, PB15:4         | Nitrosonaphthol, Copper Polychloro Phthalocyanine                                       |
| INDIAN YELLOW         | PY183, PR101             | Titanium Dioxide, Copper Polychloro Phthalocyanine, Copper Phthalocyanine               |
| INDIGO                | PB66, PG7                | Azo Pigment, Iron Oxide   |
| JAUNE BRILLIANT NO.2  | PW6, PO20                | Indigo Pure, Copper Phthalocyanine  |
| LAVENDER              | PW6, PB28, PV15          | Titanium Dioxide, Cadmium Sulfo-Selenide  |
| LEAF GREEN            | PY74, PG7, PW6           | Titanium Dioxide, Cobalt Aluminate, Sodium Alumine Silicat                              |
| LEMON YELLOW          | PY81, PW6                | Azo Pigment, Copper Phthalocyanine, Titanium Dioxide                                    |
| LIGHT RED             | PR101, PBr25, PO16       | Disazo Pigment, Titanium Dioxide  |
| LILAC                 | PW6, PR122, PV23         | Iron Oxide, Quinacridone Piment, Disazo Pigment   |
| MARINE BLUE           | PG7, PB15:3              | Titanium, Quinacridone Pigment, Carbazole Dioxazine                                     |
| MINERAL VIOLET        | PV23, PB29, PV15, PV16   | Copper Phthalocyanine, Copper Phthalocyanine  |
| NAPLES YELLOW         | PW6, PY35, PBr24         | Carbazole, Complex of Silica, Sodium lumino Silicate, Manganese Ammonium Pyro Phosphate |
| NEUTRAL TINT          | PV19, PB66, PBk11        | Titanium Dioxide, Cadmium Zinc Sulfide, Stibium-Chrome-Titanium Oxide                   |
| OLIVE GREEN           | PG8, PG8, PBr25, PY83    | Quinacridone Pigment, Indigo Pure, Iron Oxide   |
| OPERA                 | BV11, PR81               | Nitrosonaphthol, Nitrosonaphthol, Quinacridone Pigment, Disazo Pigment                  |
| PEACOCK BLUE          | PB15:3                   | Florescent Pigment, Molybdenum Tungsten Phosphate Compound                              |
| PEACOCK GREEN         | PB15:3, PG7              | Copper Phthalocyanine   |
| PERMANENT GREEN NO.1  | PY7, PG7, PY83           | Copper Polychloro Phthalocyanine, Copper Polychloro Phthalocyanine                      |
| PERMANENT GREEN NO.2  | PG7, PG7, PG8            | Copper Polychloro Phthalocyanine, Disazo Pigment  |
| PERMANENT MAGENTA     | PV19                     | Copper Polychloro Phthalocyanine, Copper Polychloro Phthalocyanine, Nitrosonaphthol     |
| PERMANENT RED         | PR209, PV19, PR2         | Quinacridone Pigment  |
| PERMANENT ROSE        | PV19, BV11               | Quinacridone Pigment, Quinacridone Pigment, Azo Pigment                                 |
|                       |                          | Quinacridone Pigment, Florescent pigment  |

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|                         |                          |  |
|-------------------------|--------------------------|--|
| PERMANENT VIOLET        | PR122, PB29, PV3         | Quinacridone Pigment, Complex of Silica,<br>Molybdatetungstatephosphate            |
| PERMANENT YELLOW DEEP   | PY1, PY83                | Azo Pigment, Disazo Pigment  |
| PERMANENT YELLOW LIGHT  | PY120, PY1, PY1          | Azo Pigment, Azo Pigment, Azo Pigment  |
| PERMANENT YELLOW ORANGE | PY83, PO13               | Disazo Pigment, Disazo Pigment   |
| PRUSSIAN BLUE           | PB27                     | Ferric Ammonium Ferrocyanide   |
| RAW SIENNA              | PBr7, PY120              | Iron Oxide, Azo Pigment  |
| RAW UMBER               | PBr7, PR101, PY42        | Iron Oxide, Iron Oxide, Iron Oxide   |
| ROSE MADDER             | PR83                     | Alizarin   |
| ROYAL BLUE              | PB15:3, PB66, PB62       | Copper Polychloro Phthalocyanine, Indigo Pure,<br>Copper Polychloro Phthalocyanine |
| SAP GREEN               | PG8, PG7                 | Nitronaphthol, Copper Polychloro Phthalocyanine                                    |
| SCARLET LAKE            | PR48:1, PR9              | Barium Salt, Benzimidazolone   |
| SEPIA                   | PBr7, PBk11              | Iron Oxide, Iron Oxide   |
| SHADOW GREEN            | PBk31                    | Perylene   |
| SHELL PINK              | PW6, PO16, PR9           | Titanium Dioxide, Disazo Pigment, Benzimidazolone                                  |
| ULTRAMARINE BLUE LIGHT  | PB29                     | Complex of Silica  |
| ULTRAMARINE BLUE DEEP   | PB29                     | Complex of Silica  |
| VANDYKE BROWN           | PBk11, PY98, PY98, PR101 | Iron Oxide, Azo Pigment,<br>Azo Pigment, Iron Oxide                                |
| VERDITER BLUE           | PW6, PB28                | Titanium Dioxide, Cobalt Aluminate   |
| VERMILION               | PO20, PR108              | Cadmium Sulfo-Selenide, Cadmium Sulfo-Selenide                                     |
| VERMILION HUE           | PO16, PO16               | Disazo Pigment, Disazo Pigment   |
| VIRIDIAN                | PG7                      | Copper Phthalocyanine  |
| VIRIDIAN HUE            | PG7                      | Copper Polychloro Phthalocyanine   |
| YELLOW OCHRE            | PY42, PO62               | Iron Oxide, Benzimidazolone  |