ROVAL USA Corporation
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Material Safety Data Sheet

ROVAL ALPHA BRUSH

Section 1- Product and Company Identification

SUPPLIER:	Hyuntech Corporation <www.roval.co.kr>
ADDRESS:	101-1405,Digital empire Ⅱ, #88, Sinwon-Ro, Yeontong-gu, Suwon-wi, Gyeonggi-do, Korea 443-734
MANUFACTURER:	Shanghai Roval Zinc Rich Paint Corporation
ADDRESS:	Fenggong Road 393, Malu Town, Jiading District, Shanghai, China 20180
EMERGENCY PHONE:	(82)107170-6286
INFORMATION PHONE:	(82)31-695-6288
DATE REVISED:	2011.10.05

Section 2-Composition/Information on Ingredients

INGREDIENT	OSHA PEL	ACGIH TLV	CAS NO.	wt %
Xylene	100ppm	100ppm	1330-20-7	17.2%
Ethyl benzene	100ppm	100ppm	100-41-4	15.9%
Mineral Spirit	100ppm	100ppm	8052-41-3	1~5%

(Net weight : 420ml=454g)

Section 3- Hazard Identification

Classification: Flammable Liquid, Vapor and high-pressure gas. Harmful or fatal if swallowed. Vapor harmful.
Emergency Overview: Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Avoid prolonged contact with eyes, skin, and clothing. DO NOT ingest. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Aspiration hazard if swallowed- can enter lungs and cause damage. There is some just weak anesthesia. When liquefied gas touches skin again, an inflammation and frostbite are caused.
Potential Acute Health: Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.
Note to Physician: Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possible death.

Section 4-First Aid Measures

Skin Contact: Remove coating with solvent. Immediately wash affected area with soap and water.

Eye Contact: Flash immediately with large amount of water at least 15 minutes. Get medical attention.

Ingestion: Do not make to be spat. Do not swallow when vomiting. Get medical attention.

Inhalation: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Pre-existing medical conditions such as eye, skin and respiratory disorders may be aggravated by exposure.

Section 5-Fire Fighting Measures

Extinguishing Media:	Carbon dioxide, dry chemical powder, form, sand
Special Fire Fighting Procedures:	Wear protective clothing, respirator, chemical safety goggles, rubber boots and heavy rubber globes.
Unusual Fire and Explosion Hazard:	Isolate from heat, electrical equipment, sparks and open flame. Water may be used to cool closed containers to prevent pressure built-up and possible spontaneous ignition or explosion when exposure to extreme heat is prevent. Aerosols are under pressure. Exposure in excess of 120−F may cause bursting of can.

Section 6-Accidental Release Measure

Personal precautions:	Avoid breathing solvent vapors. Use the necessary personal protective equipment when handling.
Environmental precautions:	Do not empty into drains or water. Avoid sparks, flames and anything which can cause fire.
Methods for cleaning:	Sweep up spilt product and fill into container for disposal.

Section 7-Handling and Storage

Storage:	Store in a cool(below 40℃) and dry place, avoid sunshine directly. Provide good room ventilation. Isolate from fire, heat and water.
Handling:	Be care that the content will spout when shaking. Do not puncture or incinerate container.

Section 8-Exposure Controls

Engineering measures:	Use protective equipment from explosion. Use air extractors to prevent fume formation. Precautions should generally be taken against electrostatic charges according to the equipment used and the way the product is handled and packaged.
Eye protection:	Chemical goggles with side shields or face recommended.
Hand protection:	Protective gloves.
Hygienic Practices:	Wash thoroughly after handling.
Others:	Protective creams and clothing recommended to skin contact.

Section 9-Physical and Chemical Properties

Boiling Point	136~144℃	**Specific Gravity**	1.70
Vapor Pressure(kPa)	1.28 (25℃)	**Melting Point**	Not available.
Vapor Density(AIR=1)	>air	**Water Partition Coefficient**	3.16(theoretical)
Solubility in Water	Insoluble.	**Auto-ignition Temp**	432℃
Appearance and Odor	Silver. Smells like solvent.		
Flash Point(Method Used)	25℃	**Flammable Limits (vol %)**	**LEL** 0.8 **UEL** 7.0

Section 10-Stability and Reactivity

Stability:	Stable under normal condition and anticipated storage.
Condition to Avoid:	Heat, open fire and sparks. Forming of mixture with atmosphere within flammable Limit.
Possibility of Hazardous Reactions	May cause react with oxidizers.
Hazardous Polymerization:	Generate carbon monoxide and carbon dioxide. Generate stimulate gas.

Section 11-Toxicological Information

Route(s) of Entry:	**Inhalation?**	Yes	**Skin?**	Yes	**Ingestion?**	Yes
Health Hazards(Acute and Chronic):	LD50 oral, rat : 4300mg/kg (Xylene) LD50 oral, rat : 3500mg/kg (Ethyl benzene) LD50 oral, rat : 5800mg/kg (Acetone)					
Carcinogenicity:	NTP Carcinogen Ingredient Known Anticipated IARC Category Carcinogenic Effects Xylene No No 3 A4 Ethyl benzene No No 2B A3 Proven for animals Acetone No No None A4 *A4 (Not classifiable for human or animal.)					
Signs and Symptoms of Exposure:	Not available.					
Medical Conditions Generally Aggravated by Exposure:	Not available.					

Section 12-Ecological Information

Ecotoxicity: Toxic to aquatic life.
Xylene: Fish toxicity: 96-hour TLm = LC_{50} 3.3 mg/L (Rainbow Trout).
Ethyl Benzene: Fish toxicity: 96-hour TLm = LC_{50} 0.4mg/L(Brown Shrimp)
Mineral Spirit: Very toxic to aquatic life.
Mobility: No data available.
Persistence and degradability: : Xylene does not have rapid degradative (BOD: 39%)
Ethyl Benzene has rapid degradative, stripping from water.
Toluene has rapid degradative (BOD: 123%)
Bioaccumulation potential: Xylene; may be low potential (log K_{ow} = 3.16)
Ethyl Benzene; may be low potential (log K_{ow} = 3.15)
Toluene may be low potential (log K_{ow} = 2.73)

Other adverse effects: This product does not contain any CFC's, chlorinated solvents, or heavy metals (lead, mercury, cadmium, etc.).
Environmental Data: (percentage by weight)
CFC: 0 HFC: 0 CL.Solv. 0 VOC: 46.2 (less acetone) HCFC: 0
According to this sheet when disposal and leakage.

Section 13-Disposal Considerations

Constantly observing local regulations.
Contaminated, empty containers are to be treated in the same way as the contents.
Disposal should be in accordance with local state and federal regulation.
The gas should be discharged perfectly when disposal of aerosol can.

Section 14-Transport Information

U.S. Department of Transportation (DOT)
Hazard Class: 2.1 Packing Group: - UN number: 1950
Proper Shipping Name: AEROSOLS, FLAMMABLE, Consumer Commodity ORM-D

Land Transport ADR/RID (CROSS BORDER)
ADR/RID Class: 2 GASES Item: 5F DANGER CODE (KEMLER): -
UN Number: 1950 Description of goods: 1950 AEROSOLS

International Maritime Organization IMDG
IMDG Class: 2 IMO regulation Page Number: 2102 UN Number: 1950
Packing group: II EMS Number: F-D, S-U Marine Pollutant: NO
Proper Shipping Name: AEROSOLS PRODUCT (IN LIMITED QUANITIES)

Air Transport ICAO-TI AND IATA-DGR
ICAO/IATA Class: 2.1
UN/ID Number: 1950
Packing Group: -
Proper Shipping Name: AEROSOLS, FLAMMABLE, N.O.S.

Section 15-Regulatory Information

U.S. Federal Regulations
Comprehensive Environmental Response and Liability Act of 1980 (CERCLA) (40 CFR 302.4)
Zinc ---- 1000 lbs RQ Acetone ---- 5000 lbs RQ
Xylene ---- 100 lbs RQ Ethyl benzene ---- 1000 lbs RQ
Releases to air, land, or water which exceed the RQ must be reported to the National Response Center [In USA: 1-(800)-424-8802] and to your Local Emergency Planning Committee.
Toxic Substances Control Act (TSCA): All components of this product are included on TSCA inventory.
Clean Air Act (CAA): This product does not contain any class 1 or 2 ozone depletors.
This product contains xylene (CAS 1330207, 1-5%by weight), ethyl benzene (CAS 100414, 1-5% by weight), listed as hazardous air pollutant.
Superfund Amendments and Reauthorization Act(SARA) Title Ⅲ Information:
SARA Section 302 (extremely hazardous substances): Not listed
304 Extremely Hazardous Substances: No listed ingredients are present on the 302/304 list.
SARA 311/312 Categories: Acute Health, Chronic Health, Fire Hazard, Sudden Release of Pressure
SARA Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Zinc	7440-66-6	30-40%
Xylene	1330-20-7	1-5%
Ethyl Benzene	100-41-4	1-5%

U.S. State Regulation:
California Proposition 65 Chemicals known to cause cancer or reproductive toxicity (2007):
This product contains ethyl benzene (1-5%), listed under chemicals know to the state to cause cancer.

Canadian Regulation
Canadian Environmental Protection Act:
All of the components of this product are included on the Canadian Domestic Substances list (DSL).
Canadian Workplace Hazardous Materials Information System (WHMIS):
Class A Compressed gas
Class B-5 Flammable aerosol
Class D-2B Material causing other toxic effects (TOXIC)

Section 16-Other Information

References:

1) GHS Classification Guidance for Enterprises. (United Nations 2009)
2) MSDS from manufacturers of raw materials
3) ROVAL's own data

Disclaimer: The information contained herein is accurate to the best of our knowledge. My company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.