

## 1. IDENTIFICATION OF THE MIXTURE AND OF THE SUPPLIER

### Product Identifier

Product	Hardener for Wash Primer [21-1]
Recommended use of chemical	Use as hardener
Restriction on use	No open flames, No sparks, and No smoking

### Supplier's details

Company	Big-Ben Chemical Company Limited
Address	168 Mu 2 Donkhaidee Krathumban Samutsakorn 74110 Thailand
Telephone number	+66 2 811 1442 or +66 2 811 1443
Fax number	+66 2 811 0632
E-mail	bbp@bbp.co.th
Emergency phone number	+66 2 811 1442 or + 66 2 811 1443

## 2. HAZARD IDENTIFICATION

Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CSR 1910.1200; the SDS and labels contain all the information as required by the standard.

Flammable liquids	Category 2
Acute toxicity - oral	Category 4
Acute toxicity - dermal	Category 5
Skin corrosion/irritation	Category 1
Eye damage/irritation	Category 2A
Sensitization - respiratory	Category 1
Specific target organ toxicity (single exposure)	Category 3
Hazardous to the aquatic environment - acute hazard	Category 3

Remark:

Percentage of mixture consisting of ingredient(s) of unknown oral toxicity: 16.12%

Percentage of mixture consisting of ingredient(s) of unknown dermal toxicity: 16.12%

Percentage of mixture consisting of ingredient(s) of unknown inhalation toxicity: 24.71%

### GHS label elements

Pictogram or symbol



Signal word

**Danger**

### Hazard statement:

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H313 May be harmful in contact with skin

H319 Causes serious eye irritation

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H402 Harmful to aquatic life

### Precautionary statement

[PREVENTION]

P210 Keep away from heat / sparks / open flames / hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground / bond container and receiving equipment.

P241 Use explosion-proof electrical / ventilating / lighting / equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.  
P285 In case of inadequate ventilation wear respiratory protection.

**[RESPONSE]**

P303+P361+P353 IF ON SKIN (or hair) Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.  
P304+P340 IF INHALED Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P304+P341 IF INHALED If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor / physician if you feel unwell.  
P330 Rinse mouth.  
P337+P313 IF eye irritation persists Get medical advice / attention.  
P342+P311 IF experiencing respiratory symptoms Call a POISON CENTER or doctor / physician.  
P370+P378 In case of fire Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**[STORAGE]**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

**[DISPOSAL]**

P501 Dispose of contents / container in accordance with local / regional / national / international regulations.

**3. COMPOSITION AND INFORMATION ON INGREDIENTS**

Chemical name	CAS No.	Content % (w/w)
1-ACETOXY-2-ETHOXYETHANE	111-15-9	8.16 - 9.45
1-Butanol	71-36-3	39.84 - 46.13
2-Butanone	78-93-3	31.69 - 36.69
Orthophosphoric acid	7664-38-2	11.19 - 12.96
water	7732-18-5	4.12 - 4.77

**4. FIRST AID MEASURES**

Inhalation	Remove to fresh air. If unconscious, place in recovery position and seek medical attention immediately.
Skin contact	Immediately flush with water for at least 15 minutes. Remove contaminated clothing. Seek medical attention immediately. Wash thoroughly after handling.
Eye contact	Hold eyelids apart and immediately flush with plenty of water for 15 minutes. Seek medical advice. Remove contact lenses.
Ingestion	Rinse mouth with water. Never give anything by mouth to an unconscious person. Obtain medical attention. If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.
Most important symptoms/effects, acute and delayed	Dizziness. Drowsiness. Headache. Nausea. Vomiting. Weakness. Unconsciousness. Skin and eye redness. Pain. Nausea. Vomiting.

**5. FIRE FIGHTING MEASURES**

Suitable extinguishing media	Dry chemical. Carbon Dioxide (CO <sub>2</sub> ). Alcohol-resistant foam. Water spray.
Unsuitable extinguishing media	High volume water jet.
Specific hazards arising from the chemical	Flammable liquid. Vapors can form an ignitable mixture with air. Vapors can flow along surfaces to a distant ignition source and flash back. Container may rupture on heating.
Specific protective equipment and	Wear self-contained breathing apparatus and full protective clothing for firefighting.

precautions for firefighters

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures	Keep unnecessary personnel away. Prevent further leakage or spillage if safe to do so. Use personal protective equipment. Use only non-sparking tools.
Environmental precautions	Prevent the material from entering drains or water courses.
Methods and materials for containment and cleaning up	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations.

## 7. HANDLING AND STORAGE

Precautions for safe handling	Avoid breathing vapor and contact with eyes, skin, and clothing. Do not leave containers open. Avoid repeated or prolonged contact with skin.
Conditions for safe storage, including any incompatibilities	Keep away from heat or flames. Keep in cool, dry, ventilated storage and in closed containers. Store away from oxidizing agent.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	<u>1-ACETOXY-2-ETHOXYETHANE</u> OSHA PEL-TWA 100 <sup>11</sup> Skin notification Y <sup>11</sup> NIOSH REL-TWA 0.5 <sup>11</sup> Skin notification Y <sup>11</sup> ACGIH TLV-TWA 5 <sup>11</sup> Skin notification Y <sup>11</sup> CAL/OSHA PEL-TWA 5 <sup>11</sup> Skin notification Y <sup>11</sup> Safe Work Australia (Australia, 4/2024) TWA : 2 ppm 8 hours. <sup>14</sup> TWA : 10.9 mg/m <sup>3</sup> 8 hours. <sup>14</sup> <u>1-Butanol</u> OSHA PEL-TWA 100 ppm (300 mg/m <sup>3</sup> ) <sup>12</sup> Skin notification N <sup>12</sup> NIOSH REL-C 50 ppm (150 mg/m <sup>3</sup> ) <sup>12</sup> Skin notification Y <sup>12</sup> ACGIH TLV-TWA 20 ppm [1998] <sup>12</sup> Skin notification N <sup>12</sup> CAL/OSHA PEL-C 50 ppm (150 mg/m <sup>3</sup> ) <sup>12</sup> Skin notification Y <sup>12</sup> Safe Work Australia (Australia, 4/2024) TWA : 20 ppm 8 hours. <sup>14</sup> TWA : 61 mg/m <sup>3</sup> 8 hours. <sup>14</sup> <u>2-Butanone</u> OSHA PEL-TWA 200 ppm (590 mg/m <sup>3</sup> ) <sup>13</sup> Skin notification N <sup>13</sup> NIOSH REL-TWA 200 ppm (500 mg/m <sup>3</sup> ) <sup>13</sup> REL-STEL 300 ppm (885 mg/m <sup>3</sup> ) <sup>13</sup>
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Skin notification N<sup>13</sup>  
 ACGIH  
 TLV-TWA 200 ppm [1992]<sup>13</sup>  
 TLV-STEL 300 ppm [1992]<sup>13</sup>  
 Skin notification N<sup>13</sup>  
 CAL/OSHA  
 PEL-TWA 200 ppm (590 mg/m<sup>3</sup>)<sup>13</sup>  
 PEL-STEL 300 ppm (885 mg/m<sup>3</sup>)<sup>13</sup>  
 Skin notification N<sup>13</sup>  
 Safe Work Australia (Australia, 4/2024)  
 TWA : 200 ppm 8 hours. <sup>15</sup>  
 TWA : 590 mg/m<sup>3</sup> 8 hours. <sup>15</sup>  
 STEL : 300 ppm 15 minutes. <sup>15</sup>  
 STEL : 885 mg/m<sup>3</sup> 15 minutes. <sup>15</sup>  
 Safe Work Australia (Australia, 4/2024)  
 TWA : 1 mg/m<sup>3</sup> 8 hours. <sup>15</sup>  
 STEL : 3 mg/m<sup>3</sup> 15 minutes. <sup>15</sup>  
 Provide adequate ventilation. Install local exhaust.

Appropriate engineering controls

## Personal protective equipment

Respiratory protection	Organic vapor respirator
Hand protection	Rubber gloves. Neoprene.
Eye protection	Safety goggle.
Skin and body protection	Wear suitable clothing

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Transparent
Odour	Organic solvent
pH	Not available
Melting point/freezing point	
Boiling point or initial boiling point and boiling range	79.6 °C (175.3 °F) (2-Butanone)
Flash point	-6.0 °C (21.2 °F) (2-Butanone)
Flammability	Flammable
Lower and upper explosion limit/flammability limit	Not available
Vapour pressure	104 hPa at 20 °C (2-Butanone)
Density and/or relative density	0.87 - 0.89 g/cm <sup>3</sup>
Relative vapour density	Not available
Solubility	Soluble in Organic solvent
Partition coefficient n-octanol/water (log value)	Not applicable
Auto-ignition temperature	404.0 °C (759.2 °F) (2-Butanone)
Decomposition temperature	Not applicable
Viscosity	9 - 11 second at 30 °C
Particle characteristics	Not applicable

## 10. STABILITY AND REACTIVITY

Reactivity	Reacts violently with strong acids and strong oxidants
Chemical stability	Stable under normal storage and handling conditions
Possibility of hazardous reaction	Will not occur
Condition to avoid	High temperatures, sparks, open flame, and all other sources of ignition

Condition to avoid	High temperatures, sparks, open flame, and all other sources of ignition
Incompatible materials	Strong oxidizing agents, strong acids
Hazardous decomposition products	Not available

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity (oral)	ATEmix = 1241.82 mg/kg (Category 4) 1-ACETOXY-2-ETHOXYETHANE LD50 (rat) oral = 2900.00 mg/kg <sup>1</sup> 1-Butanol LD50 (rat) oral = 790.00 mg/kg <sup>2</sup> 2-Butanone LD50 (rat) oral = 2900.00 mg/kg <sup>3</sup>
Acute toxicity (dermal)	ATEmix = 4838.15 mg/kg (Category 5) 1-ACETOXY-2-ETHOXYETHANE LD50 (rabbit) dermal = 10300.00 mg/kg <sup>1</sup> 1-Butanol LD50 (rabbit) dermal = 3400.00 mg/kg <sup>2</sup> 2-Butanone LD50 (rabbit) dermal = 8000.00 mg/kg <sup>3</sup>
Acute toxicity (inhalation)	Not available
Skin corrosion and skin irritation	(Orthophosphoric acid)
Serious eye damage or eye irritation	Causes serious eye irritation (1-Butanol,2-Butanone)
Respirator and skin sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled (1-Butanol)
Skin sentization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity following single exposure	May cause respiratory irritation (1-Butanol,2-Butanone)
Specific target organ toxicity following repeated exposure	Not classified
Aspiration hazard	Not classified

## 12. ECOLOGICAL INFORMATION

Acute aquatic hazard	Harmful to aquatic life <u>1-ACETOXY-2-ETHOXYETHANE</u> LC50 (fish) 96 hr = 40 mg/L <sup>7</sup> <u>1-Butanol</u> LC50 (fish) 96 hr = 100 mg/L <sup>2</sup> EC48 (shrimp) 48 hr = 1983 mg/L <sup>2</sup> <u>2-Butanone</u> LC50 (fish) 96 hr = 3200 mg/L <sup>3</sup> <u>Orthophosphoric acid</u> ErC-EC72 (Fungi) 96 hr = 100 mg/L <sup>undefined</sup>
Long term aquatic hazard	No information
Persistence and degradability	Not rapidly degradable
Bioaccumulative potential	Bioaccumulative potential <u>1-ACETOXY-2-ETHOXYETHANE</u> log KOW = 0.24 <sup>8</sup> BCF = 3 <sup>8</sup> <u>1-Butanol</u> log KOW = 0.88 <sup>9</sup> BCF = 3 <sup>9</sup> <u>2-Butanone</u> log KOW = 0.29 <sup>10</sup> BCF = 3 <sup>10</sup>
Mobility in soil	The product is insoluable in water. If released to water, some of the components will have tendency to evaporate while other components are expected to be highly mobile in soil and have the potential to reach underground water supplies.
Other adverse effects	Not available

## 13. DISPOSAL CONSIDERATIONS



### 13. DISPOSAL CONSIDERATIONS

Disposal methods	Disposing of this material/container should be done under all the regulations or handled by authorized waste collector in your country
Container disposal	Do not re-use empty containers

### 14. TRANSPORT INFORMATION

Labels required



UN number	1263
UN proper shipping name	Paint
Transport hazard class(es)	3
Packing group	III
Environmental hazards	Not applicable
Special precautions	Not applicable
Transport in bulk	Not applicable

### 15. REGULATORY INFORMATION

Inventory of existing chemical substance produced or imported in USA (TSCA)	All component in this product are listed
Toxic substance control act (TSCA)	All component in this product are listed

### 16. OTHER INFORMATION

Issue date: 05 June 2025

References

- <https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f?./temp/~m8awRK:3> (3-5-19)
- <https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f?./temp/~pB0xAg:1> (3-5-19)
- <https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f?./temp/~7mCObw:1> (3-5-19)
- <https://echa.europa.eu/brief-profile/-/briefprofile/100.028.758> (23-12-19)
- <https://echa.europa.eu/brief-profile/-/briefprofile/100.000.683> (3-5-19)
- <https://echa.europa.eu/brief-profile/-/briefprofile/100.001.054> (3-5-19)
- <https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/f?./temp/~7TG1XJ:1> (03-05-19)
- <https://pubchem.ncbi.nlm.nih.gov/compound/8095#section=Environmental-Fate-Exposure-Summary> (03-05-19)
- <https://pubchem.ncbi.nlm.nih.gov/compound/263#section=Octanol-Water-Partition-Coefficient> (3-5-19)
- <https://pubchem.ncbi.nlm.nih.gov/compound/6569#section=Environmental-Fate-Exposure-Summary> (3-5-19)
- <https://www.osha.gov/chemicaldata/chemResult.html?recNo=122> (3-5-19)
- <https://www.osha.gov/chemicaldata/chemResult.html?recNo=490> (3-5-19)
- <https://www.osha.gov/chemicaldata/chemResult.html?recNo=680> (3-5-19)
- Safe Work Australia Workplace exposure limits for airborne contaminants April 2024 (20-8-2024)
- Safe Work Australia Workplace exposure limits for airborne contaminants April 2024 (20-8-24)