

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

### Product Identifier

Product	Flip-Flop Controller [17-6000C]
Recommended use of chemical	Use as coating binder
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
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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 - dermal	Category 1
Skin corrosion/irritation	Category 3
Sensitization - respiratory	Category 1
Specific target organ toxicity (single exposure)	Category 3
Hazardous to the aquatic environment - acute hazard	Category 2

Remark:

Percentage of mixture consisting of ingredient(s) of unknown oral toxicity: 24.54%

Percentage of mixture consisting of ingredient(s) of unknown dermal toxicity: 29.45%

Percentage of mixture consisting of ingredient(s) of unknown inhalation toxicity: 22.26%

### GHS label elements

Pictogram or symbol



Signal word

**Danger**

### Hazard statement:

H225 Highly Flammable liquid and vapour

H310 Fatal in contact with skin

H316 Causes mild skin irritation

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

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H401 Toxic 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.  
P262 Do not get in eyes, on skin, or on clothing.  
P264 Wash thoroughly after handling.  
P270 Do no 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]**

P302+P350 IF ON SKIN Gently wash with plenty of soap and water.  
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.  
P310 Immediately call a POISON CENTER or doctor / physician.  
P312 Call a POISON CENTER or doctor / physician if you feel unwell.  
P322 Specific measures (see on this label).  
P332+P313 IF skin irritation occurs Get medical advice / attention.  
P342+P311 IF experiencing respiratory symptoms Call a POISON CENTER or doctor / physician.  
P361 Remove / Take off immediately all contaminated clothing.  
P363 Wash contaminated clothing before reuse.  
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-Butanol	71-36-3	2.64 - 3.06
Butyl Acetate	123-86-4	64.38 - 74.55
Dimethyl adipate	627-93-0	0.47 - 0.55
Dimethyl succinate	106-65-0	0.36 - 0.42
Dimethyl glutarate	1119-40-0	1.55 - 1.79
Ethyl Benzene	100-41-4	2.64 - 3.06
Polymer	-	6.43 - 7.45
Xylene	1330-20-7	5.28 - 6.12
cellulose acetate butyrate	9004-36-8	9.92 - 11.48
copolymer	-	1.32 - 1.53

**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 misture with air. Vapors can flow along surfaces to a distant ignition source and flash back. Container may rupture on heating.
Specific protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and full protective clothing for firefighting.

#### 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-sparkling 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 no leave containers open. Avoid repeated or prolonged contact with skin.
Conditions for safe storage, including any incompatibilites	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-Butanol</u> OSHA PEL-TWA 100 ppm (300 mg/m <sup>3</sup> ) <sup>29</sup> Skin notification N <sup>29</sup> NIOSH REL-C 50 ppm (150 mg/m <sup>3</sup> ) <sup>29</sup> Skin notification Y <sup>29</sup> ACGIH TLV-TWA 20 ppm [1998] <sup>29</sup> Skin notification N <sup>29</sup> CAL/OSHA PEL-C 50 ppm (150 mg/m <sup>3</sup> ) <sup>29</sup> Skin notification Y <sup>29</sup> Safe Work Australia (Australia, 4/2024) TWA : 20 ppm 8 hours. <sup>17</sup> TWA : 61 mg/m <sup>3</sup> 8 hours. <sup>17</sup> <u>Butyl Acetate</u> OSHA PEL-TWA 150 <sup>14</sup> Skin notification N <sup>14</sup> NIOSH REL-TWA 150 <sup>14</sup> REL-STEL 200 <sup>14</sup> Skin notification N <sup>14</sup> ACGIH TLV-TWA 50 <sup>14</sup> TLV-STEL 150 <sup>14</sup> Skin notification N CAL/OSHA PEL-TWA 150 <sup>14</sup> PEL-STEL 200 <sup>14</sup> Skin notification N <sup>14</sup> Safe Work Australia (Australia, 4/2024)
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TWA : 50 ppm 8 hours. <sup>17</sup>  
TWA : 270 mg/m<sup>3</sup> 8 hours. <sup>17</sup>  
STEL : 100 ppm 15 minutes. <sup>17</sup>  
STEL : 541 mg/m<sup>3</sup> 15 minutes. <sup>17</sup>  
Ethyl Benzene  
OSHA  
PEL-TWA 100<sup>30</sup>  
Skin notification N<sup>30</sup>  
NIOSH  
REL-TWA 100<sup>30</sup>  
REL-STEL 125<sup>30</sup>  
Skin notification N<sup>30</sup>  
ACGIH  
TLV-TWA 20<sup>30</sup>  
Skin notification N<sup>30</sup>  
CAL/OSHA  
PEL-TWA 100<sup>30</sup>  
PEL-STEL 125<sup>30</sup>  
Skin notification N<sup>30</sup>  
Safe Work Australia (Australia, 4/2024)  
TWA : 20 ppm 8 hours. <sup>17</sup>  
TWA : 87 mg/m<sup>3</sup> 8 hours. <sup>17</sup>  
Xylene  
OSHA  
PEL-TWA 100<sup>16</sup>  
Skin notification N<sup>16</sup>  
NIOSH  
REL-TWA 100<sup>16</sup>  
Skin notification N<sup>16</sup>  
ACGIH  
TLV-TWA 100<sup>16</sup>  
TLV-STEL 150<sup>16</sup>  
Skin notification N<sup>16</sup>  
CAL/OSHA  
PEL-TWA 100<sup>16</sup>  
PEL-STEL 150<sup>16</sup>  
PEL-C 300<sup>16</sup>  
Skin notification N<sup>16</sup>  
Safe Work Australia (Australia, 4/2024)  
TWA : 80 ppm 8 hours. <sup>18</sup>  
TWA : 350 mg/m<sup>3</sup> 8 hours. <sup>18</sup>  
STEL : 150 ppm 15 minutes. <sup>18</sup>  
STEL : 655 mg/m<sup>3</sup> 15 minutes. <sup>18</sup>

Appropriate engineering controls

Provide adequate ventilation. Install local exhaust.

**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

Milky white

Odour

Organic solvent

pH	- Not available
Melting point/freezing point	Not available
Boiling point or initial boiling point and boiling range	136.0 °C (276.8 °F) (Ethyl Benzene)
Flash point	12.8 °C (55.0 °F) (Ethyl Benzene)
Flammability	Flammable
Lower and upper explosion limit/flammability limit	Not available
Vapour pressure	16 hPa at 20 °C (Butyl Acetate)
Density and/or relative density	0.85 - 0.95 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	430.0 °C (806.0 °F) (Ethyl Benzene)
Decomposition temperature	Not applicable
Viscosity	55 - 59 KU 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
Incompatible materials	Strong oxidizing agents, strong acids
Hazardous decomposition products	Not available

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity (oral)	ATEmix = 6730.56 mg/kg (Not classified) 1-Butanol LD50 (rat) oral = 790.00 mg/kg <sup>19</sup> Butyl Acetate LD50 (rat) oral = 10736.00 mg/kg <sup>1</sup> Dimethyl adipate LD50 (rat) oral = 1920.00 mg/kg <sup>20</sup> Dimethyl glutarate LD50 (rat) oral = 5000.00 mg/kg <sup>21</sup> Ethyl Benzene LD50 (rat) oral = 3500.00 mg/kg <sup>22</sup>
Acute toxicity (dermal)	ATEmix = 16.65 mg/kg (Category 1) 1-Butanol LD50 (rabbit) dermal = 3400.00 mg/kg <sup>19</sup> Butyl Acetate LD50 (rabbit) dermal = 16.00 mg/kg <sup>1</sup>
Acute toxicity (inhalation)	Not available
Skin corrosion and skin irritation	Causes mild skin irritation (Xylene)
Serious eye damage or eye irritation	Not classified
Respirator and skin sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled (1-Butanol)
Skin sensitization	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, Butyl Acetate)
Specific target organ toxicity following repeated exposure	Not classified
Aspiration hazard	Not classified

## 12. ECOLOGICAL INFORMATION

Acute aquatic hazard	<p>Toxic to aquatic life</p> <p><u>1-Butanol</u> LC50 (fish) 96 hr = 100 mg/L<sup>19</sup> EC48 (shrimp) 48 hr = 1983 mg/L<sup>19</sup></p> <p><u>Butyl Acetate</u> LC50 (fish) 96 hr = 18 mg/L<sup>1</sup> EC48 (shrimp) 48 hr = 32 mg/L<sup>1</sup></p> <p><u>Ethyl Benzene</u> LC50 (fish) 96 hr = 4.20 mg/L<sup>26</sup> EC48 (shrimp) 48 hr = 2.10 mg/L<sup>25</sup> ErC-EC72 (Fungi) 96 hr = 4.60 mg/L<sup>25</sup></p> <p><u>Xylene</u> LC50 (fish) 96 hr = 3.30 mg/L<sup>4</sup></p>
Long term aquatic hazard	No information
Persistence and degradability	Rapidly degradable (Butyl Acetate, Dimethyl succinate, Dimethyl glutarate, Ethyl Benzene, Xylene)
Bioaccumulative potential	<p>Bioaccumulative potential</p> <p><u>1-Butanol</u> log KOW = 0.88<sup>27</sup> BCF = 3<sup>27</sup></p> <p><u>Butyl Acetate</u> log KOW = 1.78<sup>11</sup> BCF = 7.00<sup>11</sup></p> <p><u>Dimethyl succinate</u> log KOW = 0.33<sup>28</sup> BCF = 3.16<sup>28</sup></p> <p><u>Ethyl Benzene</u> log KOW = 3.03<sup>25</sup> BCF = 110<sup>25</sup></p> <p><u>Xylene</u> log KOW = 3.20<sup>13</sup> BCF = 14.80<sup>13</sup></p>
Mobility in soil	<p>The product is insoluble 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.</p>
Other adverse effects	Not available

### 13. DISPOSAL CONSIDERATIONS

Disposal methods	<p>Disposing of this material/container should be done under all the regulations or handled by authorized waste collector in your country</p>
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

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### References

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