

## Material safety data sheet

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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION  
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Catalog Name:Wetting tension test mixture 54.0mN/m  
Catalog Numbers: 55110

Synonym: Wettability standard solution No.54

Company Identification:

Junsei Chemical Co.,Ltd.  
4-16, 4-Chome, Nihonbashi-Honcho,  
Tokyo, 103-0023 Japan  
Phone: +81-3-3270-5411 FAX: +81-3-3241-8298  
Web: <http://www.junsei.co.jp/>  
E-mail: [eihon@junsei.co.jp](mailto:eihon@junsei.co.jp)  
EMERGENCY TELEPHONE NUMBER: +81-48-986-6161(Reagent Chemical Div.)  
(Japanese language only)

CREATION DATE: Aug 30 2001

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SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS  
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### Ingredient 1

Chemical name: 2-Ethoxyethanol  
Synonyms: Cellosolve(R); Ethylene glycol monoethyl ether  
Molecular Formula: C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>  
CAS NUMBER 110-80-5  
EC NUMBER (EINECS): 203-804-1  
JAPAN NUMBER (ENCS): 2-411, 2-2424  
Content: 2.9% (3.5vol%)

### Ingredient 2

Chemical name: Formamide  
Molecular Formula: HCONH<sub>2</sub>  
CAS NUMBER:75-12-7  
EC NUMBER (EINECS): 200-842-0  
JAPAN NUMBER (ENCS): 2-681  
Content: 97.1% (96.5vol%)

### Ingredient 3

Chemical name: Victoria pure blue BO  
Synonyms: Basic blue 7; C.I.42595  
Molecular Formula: C<sub>33</sub>H<sub>40</sub>ClN<sub>3</sub>  
CAS NUMBER:2390-60-5  
EC NUMBER (EINECS): 219-232-0

JAPAN NUMBER (ENCS): 5-1994  
Content: +0.03%

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SECTION 3      HAZARDS IDENTIFICATION  
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EMERGENCY OVERVIEW

Flammable. Harmful by inhalation, in contact with skin and if swallowed. May impair fertility. May cause harm to the unborn child.

Potential Health Effects

Eye:

Causes eye irritation. Causes redness and pain.

Skin:

Causes mild skin irritation. Harmful if absorbed through the skin. Causes redness and pain. Substance is readily absorbed through the skin.

Ingestion:

Harmful if swallowed. May cause irritation of the digestive tract. May cause systemic toxicity with acidosis. May cause nausea and vomiting. May cause unconsciousness. May cause cyanosis, characterized by bluish skin.

Inhalation:

Harmful if inhaled. May cause cyanosis, characterized by bluish-colored skin. Causes respiratory tract irritation. May cause dizziness, incoordination, and unconsciousness. May cause albuminuria (presence of serum in the urine).

Chronic:

Prolonged or repeated exposure may cause adverse reproductive effects. May cause liver and kidney damage. Prolonged exposure may produce a narcotic effect.

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SECTION 4      FIRST AID MEASURES  
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Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Get medical aid immediately. Call a poison control center. Wash mouth out with water.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively. Effects may be delayed.

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SECTION 5 FIRE FIGHTING MEASURES  
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General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable Liquid. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media:

Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam. Cool containers with flooding quantities of water until well after fire is out.

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SECTION 6 ACCIDENTAL RELEASE MEASURES  
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General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material, (e.g., vermiculite, dry sand or earth), then place into a chemical waste container. Do not use combustible materials such as saw dust. Avoid runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Use a spark-proof tool. Isolate area and deny entry. Provide ventilation.

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SECTION 7 HANDLING AND STORAGE  
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Handling:

Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Use only in a chemical fume hood.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

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SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION  
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Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eyes:

Wear chemical goggles.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES  
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Physical State: liquid  
Appearance: blue  
Odor: practically odorless  
pH: Not available.  
Vapor Pressure: 5 mbar @ 20 deg C (2-ethoxethanol)  
0.08 mbar @20 deg C (formamide)  
Viscosity: Not available.  
Boiling Point: 135 deg C (2-ethoxethanol)  
210 deg C (formamide)  
Freezing/Melting Point: Not available.  
Autoignition Temperature: Not available.  
Flash Point: 70 < FP < 165 deg C  
44 deg C(2-ethoxethanol)  
165 deg C(formamide)  
Explosion Limits, lower: 1.80 vol %(2-ethoxethanol)  
2.7 vol %(formamide)  
Explosion Limits, upper: 15.70 vol %(2-ethoxethanol)  
19.0 vol %(formamide)  
Decomposition Temperature:  
Solubility: Miscible.  
Specific Gravity/Density: Not available.

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SECTION 10 STABILITY AND REACTIVITY  
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Chemical Stability:

Forms heat-sensitive explosive peroxides on contact with air.

Conditions to Avoid:

Incompatible materials, ignition sources, exposure to air, heat.

Incompatibilities with Other Materials:

Oxidizing agents, acids, bases, copper, copper alloys, aluminum.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide, ammonia and/or derivatives.

Hazardous Polymerization: Will not occur.

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SECTION 11 TOXICOLOGICAL INFORMATION  
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(2-ethoxethanol)

RTECS#:

CAS# 110-80-5 unlisted.

LD50/LC50:

CAS# 110-80-5: Draize test, rabbit, eye: 50 mg Moderate; Draize test, rabbit, eye: 500 mg/24H Mild; Inhalation, mouse: LC50 = 1820 ppm/7H; Inhalation, rat: LC50 = 2000 ppm/7H; Oral, mouse: LD50 = 2451 mg/kg; Oral, rabbit: LD50 = 1275 mg/kg; Oral, rat: LD50 = 2125 mg/kg; Skin, rabbit: LD50 = 3300 mg/kg; Skin, rat: LD50 = 3900 mg/kg.

Carcinogenicity:

2-Ethoxyethanol -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Other:

See actual entry in RTECS for complete information.

(formamide)

RTECS#:

CAS# 75-12-7 unlisted.

LD50/LC50:

CAS# 75-12-7: Draize test, rabbit, eye: 100 mg Severe; Inhalation, rat: LC50 = >3900 ppm/6H; Oral, mouse: LD50 = 3150 mg/kg; Oral, rat: LD50 = 5577 mg/kg; Skin, rabbit: LD50 = 17 gm/kg.

Carcinogenicity:

Formamide -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Other:

See actual entry in RTECS for complete information.

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SECTION 12 ECOLOGICAL INFORMATION  
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(2-ethoxethanol)

Ecotoxicity:

Fish: Guppy: 16400; 7 day; LC50

Fish: Goldfish: 5400; 24H; LC50  
logPOW: -0.5

Other

Biodegradable. Avoid entering into waters or underground water. This chemical is not likely to bioconcentrate.

(formamide)

Ecotoxicity:

Daphnia: EC/LC50 = > 500 mg/l; 48 H; acuutAlgae: EC/LC50 = > 500 mg/l; 96 H;Bacteria: EC/LC50 = > 10000 mg/l; 17 H;

Other

Do not empty into drains. Avoid entering into waters or underground water.

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SECTION 13 DISPOSAL CONSIDERATIONS  
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Dispose of in a manner consistent with federal, state, and local regulations.

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SECTION 14 TRANSPORT INFORMATION  
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IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

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SECTION 15 REGULATORY INFORMATION  
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(2-ethoxethanol)

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 10 Flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 60 May impair fertility.

R 61 May cause harm to the unborn child.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 110-80-5: 1

United Kingdom Occupational Exposure Limits

Canada

CAS# 110-80-5 is listed on Canada's DSL List.

CAS# 110-80-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 110-80-5: OEL-AUSTRALIA:TWA 5 ppm (19 mg/m<sup>3</sup>);Skin

OEL-BELGIUM:TWA 5 ppm (18 mg/m<sup>3</sup>);Skin

OEL-DENMARK:TWA 5 ppm (18.5 mg/m<sup>3</sup>);Skin

OEL-FINLAND:TWA 50 ppm (185 mg/m<sup>3</sup>);STEL 100 ppm (370 mg/m<sup>3</sup>);Skin

OEL-FRANCE:TWA 5 ppm (19 mg/m<sup>3</sup>);Skin

OEL-GERMANY:TWA 20 ppm (75 mg/m<sup>3</sup>);Skin

OEL-HUNGARY:TWA 70 mg/m<sup>3</sup>;STEL 140 mg/m<sup>3</sup>;Skin JAN9

OEL-JAPAN:TWA 5 ppm (18 mg/m<sup>3</sup>);Skin

OEL-THE NETHERLANDS:TWA 5 ppm (19 mg/m<sup>3</sup>);Skin

OEL-THE PHILIPPINES:TWA 200 ppm (740 mg/m<sup>3</sup>);Skin

OEL-POLAND:TWA 200 mg/m<sup>3</sup>

OEL-RUSSIA:TWA 5 ppm;STEL 5 mg/m<sup>3</sup>

OEL-SWEDEN:TWA 5 ppm (19 mg/m<sup>3</sup>);STEL 10 ppm (40 mg/m<sup>3</sup>);Skin

OEL-SWITZERLAND:TWA 5 ppm (19 mg/m<sup>3</sup>);STEL 10 ppm (38 mg/m<sup>3</sup>);Skin

OEL-TURKEY:TWA 200 ppm (740 mg/m<sup>3</sup>)

OEL-UNITED KINGDOM:TWA 10 ppm (37 mg/m<sup>3</sup>);Skin

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 110-80-5 is listed on the TSCA inventory.

(formamide)

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 61 May cause harm to the unborn child.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 75-12-7: 1

United Kingdom Occupational Exposure Limits

CAS# 75-12-7: OES-United Kingdom, TWA 20 ppm TWA; 37 mg/m<sup>3</sup> TWA

CAS# 75-12-7: OES-United Kingdom, STEL 30 ppm STEL; 56 mg/m<sup>3</sup> STEL

Canada

CAS# 75-12-7 is listed on Canada's DSL List.

CAS# 75-12-7 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 75-12-7: OEL-AUSTRALIA:TWA 10 ppm (15 mg/m<sup>3</sup>);Skin

OEL-BELGIUM:TWA 10 ppm (18 mg/m3);Skin  
OEL-DENMARK:TWA 20 ppm (30 mg/m3)  
OEL-FINLAND:TWA 20 ppm (37 mg/m3);STEL 30 ppm (55 mg/m3);Skin  
OEL-FRANCE:TWA 20 ppm (30 mg/m3)  
OEL-THE NETHERLANDS:TWA 20 ppm (30 mg/m3)  
OEL-RUSSIA:STEL 3 mg/m3  
OEL-SWITZERLAND:TWA 20 ppm (37 mg/m3)  
OEL-UNITED KINGDOM:TWA 20 ppm (30 mg/m3);STEL 30 ppm (45 mg/m3)  
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV  
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 75-12-7 is listed on the TSCA inventory.

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SECTION 16    OTHER INFORMATION  
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