

Helaian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 16.08.2017

Disemak semula pada 16.08.2017

1 Pengenalan bahan kimia dan pembekal

Nama dagang: 2331ZX Soldering Flux and Flux Pen**Kegunaan yang disarankan bagi bahan dan sekatan penggunaan Flux Memateri****Perincian pembekal risalah data keselamatan****Pengilang/Pembekal:**

Kester Inc.
800 West Thorndale Avenue
Itasca, IL 60143 USA
Tel (630) 616-4000

ITW Specialty Materials (Suzhou) Co., Ltd.
Heng Qiao Road
Wujiang Economic Development Zone
Suzhou, Jiangsu 215200 China
Tel +86 512 82060808

Kester GmbH
Ganghofer Strasse 45
D-82216 Gernlinden Germany
Tel +49 (0) 8142 4885 0

Maklumat lanjut dapat diperoleh daripada: Product Compliance: EHS_Kester@kester.com**Nombor telefon kecemasan:**

CHEMTREC 24-Hour Emergency Response Telephone Number : (800) 424-9300

CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number : (703) 527-3887

2 Pengenalan bahaya

Pengelasan bahan atau campuran

Nyalaan

Cec. M. Bkr 2 H225 Cecair dan wap amat mudah terbakar.



Bahaya kesihatan

Kars. 2 H351 Disyaki menyebabkan kanser.



Kakisan

Kks. Kulit 1B H314 Menyebabkan lecuran kulit dan kerosakan mata yang teruk.

Kros. Mata 1 H318 Menyebabkan kerosakan mata yang serius.



STOT SE 3 H336 Boleh menyebabkan mengantuk atau kepeningan.

Melabelkan unsur**Unsur label GHS** Produk ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).

(Bersambung ke halaman 2)

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Nama dagang: 2331ZX Soldering Flux and Flux Pen

(Sambungan halaman 1)

Piktogram hazard



GHS02 GHS05 GHS07 GHS08

Perkataan isyarat Bahaya

Komponen pelabelan yang menentukan bahaya:

diethanolamine

Glycolic Acid

Pernyataan hazard

H225 Cecair dan wap amat mudah terbakar.

H314 Menyebabkan lecuran kulit dan kerosakan mata yang teruk.

H351 Disyaki menyebabkan kanser.

H336 Boleh menyebabkan mengantuk atau kepeningan.

Pernyataan langkah perlindungan

P210 Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.

P240 Bumikan/ikat bekas dan kelengkapan terimaan.

P243 Ambil langkah berjaga-jaga terhadap nyahcas statik.

P260 Jangan sedut habuk/wasap/gas/ kabus/wap/semburan.

P264 Basuh sebersih-bersihnya selepas mengendalikan bahan.

P280 Pakai sarung tangan pelindung/pakaian pelindung/perindungan mata/perindungan muka.

P301+P330+P331 JIKA TERTELAN: Berkumur. JANGAN paksa muntah.

P303+P361+P353 JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.

P304+P340 JIKA TERSEDUT: Pindahkan mangsa ke kawasan berudara segar dan biarkan mangsa dalam keadaan rehat supaya mangsa dapat bernafas dengan selesa.

P305+P351+P338 JIKA TERKENA MATA: Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika ada dan dapat dilakukan dengan mudah. Teruskan membilas.

P314 Dapatkan nasihat/rawatan perubatan jika anda rasa tidak sihat.

P370+P378 Jika berlaku kebakaran: Gunakan untuk memadam kebakaran: CO₂, serbuk atau semburan air.

P403+P233 Simpan di tempat yang dialihudarkan dengan baik. Pastikan bekas ditutup dengan ketat.

P405 Simpan di tempat berkunci.

P501 Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

Sistem pengelasan:

NFPA ratings (Scale 0 - 4)



Health = 1
Fire = 3
Reactivity = 0

Bahaya lain

Keputusan penilaian PBT dan vPvB

PBT: Tidak berkenaan

vPvB: Tidak berkenaan

3 Komposisi dan maklumat mengenai ramuan bahan kimia berbahaya

Keterangan: Campuran bahan disenaraikan di bawah bersama dengan bahan tambah tidak berbahaya.

Komponen berbahaya :

CAS: 67-63-0	Isopropanol	 Cec. M. Bkr 2, H225  Kreng. Mata 2, H319; STOT SE 3, H336	55-70%
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(Bersambung ke halaman 3)

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			(Sambungan halaman 2)
CAS: 56-81-5	glycerol		10-25%
CAS: 111-42-2	diethanolamine	⚠ Kars. 2, H351; STOT RE 2, H373 ⚠ Kks. Kulit 1B, H314; Kros. Mata 1, H318 ⚠ Toks. Akut 4, H302	5-10%
Trade Secret	Organic Salt	⚠ Toks. Akut 4, H302	5-10%
Trade Secret	Organic Acid	⚠ Kreng. Kulit 2, H315; Kreng. Mata 2, H319; STOT SE 3, H335	3-5%
CAS: 79-14-1	Glycolic Acid	⚠ Kks. Kulit 1B, H314; Kros. Mata 1, H318 ⚠ Toks. Akut 4, H302	1-3%

4 Langkah-langkah pertolongan cemas

Keterangan langkah pertolongan cemas

Jika tersedut: Berikan udara bersih, hubungi doktor jika terdapat aduan.

Jika terkena kulit: Segera basuh dengan air dan sabun serta bilas bersih-bersih.

Jika terkena mata:

Bilas mata sambil membukanya di bawah air yang mengalir selama beberapa minit. Jika gejala berterusan, hubungi doktor.

Jika tertelan: Segera dapatkan nasihat perubatan.

Maklumat untuk doktor:

Gejala dan kesan paling penting, akut dan lewat Tiada maklumat lanjut yang diperoleh.

Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan Tiada maklumat lanjut yang diperoleh.

5 Langkah-langkah pemadaman kebakaran

Bahan pemadam api

Agen pemadam yang sesuai:

CO₂, serbuk atau semburan air. Padam kebakaran besar dengan semburan air atau busa rintangan alkohol.

Bahaya khusus yang timbul daripada bahan atau campuran Jika berlaku kebakaran, yang berikut mungkin dilepaskan:

Panduan kepada pemadam kebakaran

Kelengkapan perlindungan: Tiada langkah khusus diperlukan.

6 Langkah-langkah pelepasan tidak sengaja

Langkah perlindungan diri, kelengkapan pelindung dan prosedur kecemasan

Pakai kelengkapan perlindungan. Jauhkan mereka yang tidak dilindung dari kawasan tercemar.

Pastikan pengalihudaraan mencukupi.

Langkah perlindungan alam sekitar: Tiada langkah khusus diperlukan.

Kaedah dan bahan untuk pembendungan dan pembersihan: Pastikan pengalihudaraan mencukupi.

Rujukan ke bahagian lain

Lihat Bahagian 7 untuk maklumat pengendalian yang selamat.

Lihat Bahagian 8 untuk maklumat kelengkapan perlindungan diri.

Lihat Bahagian 13 untuk maklumat pelupusan.

7 Pengendalian dan penyimpanan

Pengendalian:

Langkah perlindungan untuk pengendalian selamat Elakkan pembentukan aerosol.

Maklumat kebakaran dan perlindungan daripada letupan:

Jauhkan dari punca pencucuhan - Dilarang merokok.

Lindungi daripada cas-cas elektrostatik.

(Bersambung ke halaman 4)

Nama dagang: 2331ZX Soldering Flux and Flux Pen

(Sambungan halaman 3)

Keadaan untuk penyimpanan selamat, termasuk apa-apa ketakserasian

Penyimpanan:

Keperluan yang mesti dipenuhi oleh bilik stor dan ruang simpanan. Simpan di tempat sejuk.

Maklumat penyimpanan di dalam satu tempat penyimpanan yang biasa: Tidak diperlukan.

Maklumat lanjut tentang syarat penyimpanan:

Pastikan bekas sentiasa bertutup rapat.

Simpan di tempat yang sejuk dan kering di dalam bekas bertutup rapat.

Kegunaan akhir yang khusus Tiada maklumat lanjut yang diperoleh.

8 Kawalan pendedahan dan perlindungan diri

Maklumat tambahan tentang reka bentuk kemudahan teknikal: Tiada maklumat lanjut, lihat perkara 7.

Parameter kawalan

Ramuan dengan nilai had yang memerlukan pemantauan di tempat kerja:

CAS: 67-63-0 Isopropanol

PEL | Nilai jangka panjang: 49 mg/m³, 10 ppm

CAS: 56-81-5 glycerol

PEL | Nilai jangka panjang: 10 mg/m³

CAS: 111-42-2 diethanolamine

PEL | Nilai jangka panjang: 2 mg/m³, 0.46 ppm
(kulit)

Kawalan pendedahan

Kelengkapan perlindungan diri:

Langkah perlindungan dan kebersihan am:

Langkah berjaga-jaga yang biasa hendaklah diikuti apabila mengendalikan bahan kimia.

Jauhkan daripada makanan, minuman dan makanan haiwan.

Segera tanggalkan semua pakaian yang tercemar dan kotor.

Basuh tangan sebelum berhenti rehat dan apabila kerja selesai.

Elakkan daripada terkena mata dan kulit.

Perlindungan pernafasan:

Tidak diperlukan jika bilik mempunyai pengalihudaraan yang baik.

Gunakan alat perlindungan pernafasan yang sesuai jika pengalihudaraan tidak mencukupi.

Perlindungan tangan:



Sarung tangan pelindung.

Bahan sarung tangan

Getah nitril, NBR

Getah asli, NR

Jangka masa penyerapan bahan sarung tangan

Waktu kemunculan yang tepat hendaklah diperoleh pengeluar sarung tangan pelindung dan hendaklah dipatuhi.

Perlindungan mata:



Kaca keselamatan

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(Sambungan halaman 4)

9 Sifat fizikal dan kimia

Maklumat tentang ciri fizik dan kimia

Maklumat Am

Rupa:

Bentuk: Cecair
Warna: Berwarna kuning jingga
Bau: Seperti alkohol

Nilai pH pada 20°C (68 °F): 6.5

**Perubahan pada keadaan
Takat lebur/takat beku** Tidak ditentukan.

Takat kilat: < 23°C (<73.4 °F)

Suhu pencucuhan: 370°C (698 °F)

Suhu pengautocucuhan Produk tidak tercucuh sendiri

Bahaya letupan: Produk tidak mudah meletup. Walau bagaimanapun, pembentukan campuran udara/wap mungkin berlaku.

Had letupan :

Bawah: 2Vol %
Atas: 12Vol %

Tekanan wap pada 20°C (68 °F): 43hPa (32.3 mm Hg)

Ketumpatan pada 20°C (68 °F): 0.9g/cm³ (7.51 lbs/gal)

Keterlarutan dalam / Keterlarutcampuran dengan

Air: Terlarut campur sepenuhnya.

Kandungan pelarut:

Pelarut organik: 80.6%
Air: 2.8%

Kandungan pepejal: 11.6%

Maklumat lain Tiada maklumat lanjut yang diperoleh.

10 Kestabilan dan kereaktifan

Kereaktifan Tiada maklumat lanjut yang diperoleh.

Kestabilan kimia

Penguraian terma/keadaan yang perlu dielakkan: Tiada penguraian jika digunakan mengikut spesifikasi.

Kemungkinan tindak balas berbahaya Tiada tindak balas berbahaya yang diketahui.

Keadaan yang perlu dielakkan Tiada maklumat lanjut yang diperoleh.

Bahan tidak serasi: Tiada maklumat lanjut yang diperoleh.

Produk penguraian yang berbahaya: Tiada produk penguraian berbahaya yang diketahui.

Nama dagang: 2331ZX Soldering Flux and Flux Pen

(Sambungan halaman 5)

11 Maklumat toksikologi

Maklumat tentang kesan toksikologi

Ketoksikan akut:

Nilai LD/LC50 yang berkaitan untuk pengelasan:

CAS: 67-63-0 Isopropanol

Oral	LD50	5,045 mg/kg (rat)
Derma	LD50	12,800 mg/kg (rabbit)
Tersedut	LC50/4 h	30 mg/l (rat)

CAS: 56-81-5 glycerol

Oral	LD50	12,600 mg/kg (rat)
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CAS: 111-42-2 diethanolamine

Oral	LD50	1,600 mg/kg (rat)
Derma	LD50	12,200 mg/kg (rabbit)

Kesan kerengsaan primer:

Kakisan atau kerengsaan kulit Tiada kesan merengsa.

Kerosakan atau kerengsaan mata yang serius Kesan merengsa.

Pemekaan pernafasan / kulit Pemekaan mungkin berlaku melalui penyedutan.

Maklumat tambahan toksikologi:

Produk menunjukkan bahaya berikut mengikut kaedah pengiraan Garis Panduan Pengelasan Am EU bagi Sediaan seperti yang dikeluarkan dalam versi terbaru:

Perengsa

12 Maklumat ekologi

Ketoksikan

Ketoksikan akuatik: Tiada maklumat lanjut yang diperoleh.

Keterusan dan keterdegradasikan Tiada maklumat lanjut yang diperoleh.

Kelakuan dalam sistem alam sekitar:

Potensi bioakumulatif Tiada maklumat lanjut yang diperoleh.

Mobiliti di dalam tanah Tiada maklumat lanjut yang diperoleh.

Maklumat tambahan ekologi:

Nota am:

Jangan biarkan produk yang tidak dicairkan atau dalam kuantiti yang banyak memasuki air tanah, saluran air atau sistem pembetungan.

Keputusan penilaian PBT dan vPvB

PBT: Tidak berkenaan

vPvB: Tidak berkenaan

Kesan buruk yang lain Tiada maklumat lanjut yang diperoleh.

13 Maklumat pelupusan

Kaedah rawatan sisa

Syor:

Tidak boleh dilupuskan bersama dengan sampah isi rumah. Jangan biarkan produk memasuki sistem pembetungan.

Pembungkusan yang tidak bersih:

Syor: Pelupusan mestilah dijalankan menurut peraturan rasmi

(Bersambung ke halaman 7)

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Nama dagang: 2331ZX Soldering Flux and Flux Pen

Agen pencuci yang disyorkan: Air, jika perlu, digunakan bersama dengan agen pencuci.

(Sambungan halaman 6)

14 Maklumat pengangkutan

Nombor UN
ADR, IMDG, IATA UN1219
Nama penghantaran UN yang betul
ADR 1219 ISOPROPANOL (ISOPROPYL ALCOHOL) solution
IMDG, IATA ISOPROPANOL (ISOPROPYL ALCOHOL) solution
pengangkutan kelas bahaya
ADR, IMDG, IATA



Kelas 3 Cecair mudah terbakar.
Label 3
Kumpulan pembungkusan
ADR, IMDG, IATA II
Hazard persekitaran: Tidak berkenaan
Langkah perlindungan khas untuk pengguna Amaran: Cecair mudah terbakar.
Kod bahaya (Kemler): 33
Nombor EMS: F-E,S-D
Stowage Category B
Pengangkutan dalam pukal menurut Lampiran II MARPOL73/78 dan Kod IBC Tidak berkenaan

Pengangkutan/Maklumat Tambahan:

ADR
Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml

IMDG
Limited quantities (LQ) 1L
Excepted quantities (EQ) Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
"Peraturan Model" UN: UN 1219 ISOPROPANOL (ISOPROPYL ALCOHOL) SOLUTION, 3, II

15 Maklumat pengawalseliaan

Peraturan/undang-undang keselamatan, kesihatan dan persekitaran khusus untuk bahan atau campuran tersebut

All ingredients are listed on the following Government Inventories:

China: Inventory of Existing Chemical Substances in China (IECSC)
Korea: Korea Existing Chemicals List (ECL)
Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)
Japan: Inventory of Existing and New Chemical Substances (ENCS)
Philippines: Philippine Inventory of Chemicals and Chemical Substances (PICCS)
USA: TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

Unsur label GHS Produk ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).

(Bersambung ke halaman 8)

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Nama dagang: 2331ZX Soldering Flux and Flux Pen

(Sambungan halaman 7)

Piktogram hazard



GHS02 GHS05 GHS07 GHS08

Perkataan isyarat Bahaya

Komponen pelabelan yang menentukan bahaya:

diethanolamine

Glycolic Acid

Pernyataan hazard

H225 Cecair dan wap amat mudah terbakar.

H314 Menyebabkan lecuran kulit dan kerosakan mata yang teruk.

H351 Disyaki menyebabkan kanser.

H336 Boleh menyebabkan mengantuk atau kepeningan.

Pernyataan langkah perlindungan

P210 Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.

P240 Bumikan/ikat bekas dan kelengkapan terimaan.

P243 Ambil langkah berjaga-jaga terhadap nyahcas statik.

P260 Jangan sedut habuk/wasap/gas/ kabus/wap/semburan.

P264 Basuh sebersih-bersihnya selepas mengendalikan bahan.

P280 Pakai sarung tangan pelindung/pakaian pelindung/perindungan mata/perindungan muka.

P301+P330+P331 JIKA TERTELAN: Berkumur. JANGAN paksa muntah.

P303+P361+P353 JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.

P304+P340 JIKA TERSEDUT: Pindahkan mangsa ke kawasan berudara segar dan biarkan mangsa dalam keadaan rehat supaya mangsa dapat bernafas dengan selesa.

P305+P351+P338 JIKA TERKENA MATA: Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika ada dan dapat dilakukan dengan mudah. Teruskan membilas.

P314 Dapatkan nasihat/rawatan perubatan jika anda rasa tidak sihat.

P370+P378 Jika berlaku kebakaran: Gunakan untuk memadam kebakaran: CO₂, serbuk atau semburan air.

P403+P233 Simpan di tempat yang dialihudarkan dengan baik. Pastikan bekas ditutup dengan ketat.

P405 Simpan di tempat berkunci.

P501 Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

Penilaian keselamatan bahan kimia: Penilaian Keselamatan Bahan Kimia belum dilakukan.

16 Maklumat lain

"Maklumat yang terkandung dalam dokumen ini adalah berdasarkan data yang dianggap tepat dan diberikan semata-mata untuk makluman, pertimbangan dan penyiasatan. Kester tidak memberikan apa-apa waranti, tidak membuat apa-apa pernyataan dan tidak bertanggungjawab terhadap ketepatan, lengkapnya atau kesesuaian data ini untuk apa-apa kegunaan pembeli. Data dalam Risalah Data Keselamatan Bahan ini hanya berkaitan dengan produk ini dan tidak berkaitan dengan penggunaan apa-apa bahan lain atau apa-apa proses. Semua produk kimia hendaklah digunakan hanya oleh, atau di bawah arahan, kakitangan yang layak dari segi teknikal yang mengetahui tentang bahaya yang terlibat dan perlunya perhatian yang sewajarnya semasa pengendalian.

Jabatan yang mengeluarkan SDS: Product Compliance / EHS Department

Hubungi: EHS_Kester@kester.com

Singkatan dan akronim:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

(Bersambung ke halaman 9)

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(Sambungan halaman 8)

NFPA: National Fire Protection Association (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Cec. M. Bkr 2: Cecair mudah terbakar – Kategori 2
Toks. Akut 4: Ketoksikan akut – Kategori 4
Kks. Kulit 1B: Kakisan atau kerengsaan kulit – Kategori 1B
Kreng. Kulit 2: Kakisan atau kerengsaan kulit – Kategori 2
Kros. Mata 1: Kerosakan mata atau kerengsaan mata yang serius – Kategori 1
Kreng. Mata 2: Kerosakan mata atau kerengsaan mata yang serius – Kategori 2
Kars. 2: Kekarsinogenan – Kategori 2
Kars. 2: Kekarsinogenan – Kategori 2
STOT SE 3: Ketoksikan organ sasaran khusus (pendedahan tunggal) – Kategori 3
STOT RE 2: Ketoksikan organ sasaran khusus (pendedahan berulang) – Kategori 2

-MY-

Safety Data Sheet

according to P.U.(A) 310/2013

Printing Date: 16.08.2017

Version number 11

Revision: 16.08.2017

1 Identification of the hazardous chemical and of the supplier

Trade name: 2331ZX Soldering Flux and Flux Pen**Recommended use of the chemical and restrictions on use** Flux Memateri**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Kester Inc.
800 West Thorndale Avenue
Itasca, IL 60143
Tel 00+1 + 630 616 4000

ITW Specialty Materials (Suzhou) Co., Ltd.
Hengqiao Road, Wujiang Economic Development Zone
Suzhou, Jiangsu Province, China 215200
Tel +86 512 82060807

Kester GmbH
Ganghofer Strasse 45
D-82216 Gernlinden Germany
Tel +49 (0) 8142 4785 0

Further information obtainable from: Product Compliance: EHS_Kester@kester.com**Emergency telephone number:**

CHEMTREC 24-Hour Emergency Response Telephone Number : (800) 424-9300

CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number : (703) 527-3887

2 Hazard identification

Classification of the substance or mixture

flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



health hazard

Carc. 2 H351 Suspected of causing cancer.



corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



STOT SE 3 H336 May cause drowsiness or dizziness.

Label elements**GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

(Continued on page 2)

Safety Data Sheet

according to P.U.(A) 310/2013

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Trade name: 2331ZX Soldering Flux and Flux Pen

(Continued from page 1)

Hazard pictograms



GHS02 GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:

diethanolamine

Glycolic Acid

Hazard statements

H225 Highly flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

H351 Suspected of causing cancer.

H336 May cause drowsiness or dizziness.

Precautionary statements

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

P240 Ground/bond container and receiving equipment.

P243 Take precautionary measures against static discharge.

P260 Do not breathe dust/fume/gas/mist/ vapours/spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get medical advice/attention if you feel unwell.

P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

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

Classification system:

NFPA ratings (scale 0 - 4)



Health = 1
Fire = 3
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment



PBT: Not applicable.

vPvB: Not applicable.

3 Composition and information of the ingredients of the hazardous chemical

Description: Mixture of substances listed below with nonhazardous additions.

Chemical components:

CAS: 67-63-0	Isopropanol	 Flam. Liq. 2, H225  Eye Irrit. 2, H319; STOT SE 3, H336	55-70%
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CAS: 56-81-5	glycerol		10-25%
CAS: 111-42-2	diethanolamine	⚠ Carc. 2, H351; STOT RE 2, H373 ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302	5-10%
Trade Secret	Organic Salt	⚠ Acute Tox. 4, H302	5-10%
Trade Secret	Organic Acid	⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	3-5%
CAS: 79-14-1	Glycolic Acid	⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318 ⚠ Acute Tox. 4, H302	1-3%

4 First-aid measures

Description of first aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Seek immediate medical advice.

Information for doctor:

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture In case of fire, the following can be released:

Advice for firefighters

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions: No special measures required.

Methods and material for containment and cleaning up: Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling Prevent formation of aerosols.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

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Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Not required.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 Exposure controls and personal protection

Additional information about design of technical facilities: No further data; see item 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:

CAS: 67-63-0 Isopropanol

PEL (Malaysia) Long-term value: 49 mg/m³, 10 ppm

CAS: 56-81-5 glycerol

PEL (Malaysia) Long-term value: 10 mg/m³

CAS: 111-42-2 diethanolamine

PEL (Malaysia) Long-term value: 2 mg/m³, 0.46 ppm
(kulit)

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Respiratory protection:

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands:



Protective gloves

Material of gloves

Nitrile rubber, NBR

Natural rubber, NR

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Safety Glasses with Side Shields Required

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9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid
Colour: Amber coloured
Odour: Alcohol-like

pH-value at 20°C (68 °F): 6.5

Change in condition

Melting point/freezing point Undetermined.

Flash point: < 23°C (<73.4 °F)

Ignition temperature: 370°C (698 °F)

Auto-ignition temperature Product is not selfigniting.

Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:

Lower: 2Vol %
Upper: 12Vol %

Vapour pressure at 20°C (68 °F): 43hPa (32.3 mm Hg)

Density at 20°C (68 °F): 0.9g/cm³ (7.51 lbs/gal)

Solubility in / Miscibility with water: Fully miscible.

Solvent content:

Organic solvents: 80.6%
Water: 2.8%

Solids content: 11.6%

Other information Tiadak maklumat lanjut yang diperoleh.

10 Stability and reactivity

Reactivity No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: No dangerous decomposition products known.

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11 Toxicological information

Information on toxicological effects

Acute toxicity

LD/LC50 values relevant for classification:

CAS: 67-63-0 Isopropanol

Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

CAS: 56-81-5 glycerol

Oral	LD50	12,600 mg/kg (rat)
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CAS: 111-42-2 diethanolamine

Oral	LD50	1,600 mg/kg (rat)
Dermal	LD50	12,200 mg/kg (rabbit)

Primary irritant effect:

Skin corrosion or irritation No irritant effect.

Serious eye damage or eye irritation Irritating effect.

Respiratory / skin sensitization Sensitisation possible through inhalation.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability Tiadak maklumat lanjut yang diperoleh.

Behaviour in environmental systems:

Bioaccumulative potential Tiadak maklumat lanjut yang diperoleh.

Mobility in soil Tiadak maklumat lanjut yang diperoleh.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects Tiadak maklumat lanjut yang diperoleh.

13 Disposal information

Waste treatment methods

Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

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14 Transportation information

UN-Number	UN1219
ADR, IMDG, IATA	
UN proper shipping name	
ADR	1219 ISOPROPANOL (ISOPROPYL ALCOHOL) solution
IMDG, IATA	ISOPROPANOL (ISOPROPYL ALCOHOL) solution
Transport hazard class(es)	

ADR, IMDG, IATA



Class	3 Flammable liquids.
Label	3
Packing group	
ADR, IMDG, IATA	II
Environmental hazards:	Not applicable.
Special precautions for user	Amaran: Flammable liquids.
Danger code (Kemler):	33
EMS Number:	F-E,S-D
Stowage Category	B
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.

Transport/Additional information:

ADR	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
Transport category	2
Tunnel restriction code	D/E

IMDG	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1219 ISOPROPANOL (ISOPROPYL ALCOHOL) SOLUTION, 3, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
All ingredients are listed on the following Government Inventories:

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China: Inventory of Existing Chemical Substances in China (IECSC)
 Korea: Korea Existing Chemicals List (ECL)
 Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)
 Japan: Inventory of Existing and New Chemical Substances (ENCS)
 Philippines: Philippine Inventory of Chemicals and Chemical Substances (PICCS)
 USA: TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).

Hazard pictograms



GHS02 GHS05 GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:

diethanolamine
 Glycolic Acid

Hazard statements

H225 Highly flammable liquid and vapour.
 H314 Causes severe skin burns and eye damage.
 H351 Suspected of causing cancer.
 H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.
 P240 Ground/bond container and receiving equipment.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe dust/fume/gas/mist/ vapours/spray.
 P264 Wash thoroughly after handling.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 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.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P314 Get medical advice/attention if you feel unwell.
 P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Safety Data Sheet (SDS) relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet (SDS) as a source for hazard information.

Department issuing SDS: Product Compliance / EHS Department
Contact: EHS_Kester@kester.com

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Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity - oral – Category 4

Skin Corr. 1B: Skin corrosion or irritation – Category 1B

Skin Irrit. 2: Skin corrosion or irritation – Category 2

Eye Dam. 1: Serious eye damage or eye irritation – Category 1

Eye Irrit. 2: Serious eye damage or eye irritation – Category 2

Carc. 2: Carcinogenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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