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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

* 1 Pengenalan bahan kimia dan pembekal

Nama dagang: 2125 Soldering Flux
Kegunaan yang disarankan bagi bahan dan sekatan penggunaan Flux Mematerі

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

Kros. Mata 1 H318 Menyebabkan kerosakan mata yang serius.

Kreng. Kulit 2 H315 Menyebabkan kerengsaan kulit.

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

(Bersambung ke halaman 2)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 1)

Piktogram hazard

GHS02 GHS05 GHS08

Perkataan isyarat Bahaya

Komponen pelabelan yang menentukan bahaya:
diethanolamine
methanol
Glycolic Acid
Isobutil metil keton

Pernyataan hazard
H225 Cecair dan wap amat mudah terbakar.
H315 Menyebabkan kerengsaan kulit.
H318 Menyebabkan kerosakan mata yang serius.
H351 Disyaki menyebabkan kanser.

Pernyataan langkah perlindungan

P261	Elakkan daripada tersedut habuk/wasap/gas/kabus/wap/semburan.
P264	Basuh sebersih-bersihnya selepas mengendalikan bahan.
P280	Pakai sarung tangan pelindung/pakaian pelindung/perlindungan mata/perlindungan muka.
P303+P361+P353	JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.
P304+P341	JIKA TERSEDUT: Jika mangsa sukar bernafas, 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.
P308+P313	JIKA terdedah atau terkena bahan: Dapatkan nasihat/ rawatan perubatan.
P403+P235	Simpan di tempat yang dialihudarakan dengan baik. Simpan di tempat sejuk.
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: 64-17-5	Etil alkohol	Cec. M. Bkr 2, H225	40-55%
Trade Secret	Organic Acid	Kreng. Mata 2, H319	10-25%
CAS: 34590-94-8	(2-methoxymethylethoxy)propanol		5-10%

(Bersambung ke halaman 3)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 2)

CAS: 67-63-0	Isopropanol	Cec. M. Bkr 2, H225 Kreng. Mata 2, H319; STOT SE 3, H336	3-5%
CAS: 79-14-1	Glycolic Acid	Kks. Kulit 1B, H314; Kros. Mata 1, H318 Toks. Akut 4, H302	3-5%
CAS: 111-42-2	diethanolamine	Kars. 2, H351; STOT RE 2, H373 Kks. Kulit 1B, H314; Kros. Mata 1, H318 Toks. Akut 4, H302	3-5%
CAS: 67-56-1	methanol	Cec. M. Bkr 2, H225 Toks. Akut 2, H330 STOT SE 1, H370	1-3%
CAS: 108-10-1	Isobutil metil keton	Cec. M. Bkr 2, H225 Toks. Akut 3, H331 Kars. 2, H351 Kreng. Mata 2, H319; STOT SE 3, H335	≥0.1-≤1%

*
4 Langkah-langkah pertolongan cemas

Keterangan langkah pertolongan cemas
Maklumat am:
Gejala keracunan boleh berlaku selepas beberapa jam, maka rawatan perubatan hendaklah diberikan sekurang-kurangnya 48 jam selepas kemalangan.
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 Tiadak maklumat lanjut yang diperoleh.
Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan Tiadak 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
Nitrogen oksida (NOx)
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: Jangan biarkannya memasuki pembentung/air permukaan atau tanah.
Kaedah dan bahan untuk pembendungan dan pembersihan:
Lupuskan bahan tercemar sebagai sisa mengikut perkara 13.
Pastikan pengalihudaraan mencukupi.

(Bersambung ke halaman 4)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 3)

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.

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 Tiadak 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: 64-17-5 Etil alkohol	
PEL	Nilai jangka panjang: 1880 mg/m³, 1000 ppm
CAS: 34590-94-8 (2-methoxymethylethoxy)propanol	
PEL	Nilai jangka panjang: 606 mg/m³, 100 ppm (kulit)
CAS: 67-63-0 Isopropanol	
PEL	Nilai jangka panjang: 49 mg/m³, 10 ppm
CAS: 111-42-2 diethanolamine	
PEL	Nilai jangka panjang: 2 mg/m³, 0.46 ppm (kulit)
CAS: 67-56-1 methanol	
PEL	Nilai jangka panjang: 262 mg/m³, 200 ppm (kulit)
CAS: 108-10-1 Isobutil metil keton	
PEL	Nilai jangka panjang: 205 mg/m³, 50 ppm

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.

(Bersambung ke halaman 5)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 4)

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

*
9 Sifat fizikal dan kimia

Maklumat tentang ciri fizik dan kimia
Maklumat Am

Rupa:	
Bentuk:	Cecair
Warna:	Warna jingga muda
Bau:	Seperti alkohol
Nilai pH:	Tidak ditentukan.
Perubahan pada keadaan	
Takat lebur/takat beku	Tidak ditentukan.
Takat didih awal dan julat didih	77°C (170.6 °F)
Takat kilat:	18°C (64.4 °F)
Suhu pencucuhan:	270°C (518 °F)
Suhu pengautocucuhan	Produk tidak tercucuh sendiri
Bahaya letupan:	Produk tidak mudah meletup. Walau bagaimanapun, pembentukan campuran udara/wap mungkin berlaku.
Had letupan :	
Bawah:	3.5Vol %
Atas:	15Vol %
Tekanan wap pada 20°C (68 °F):	59hPa (44.3 mm Hg)
Ketumpatan pada 20°C (68 °F):	0.96g/cm³ (8.01 lbs/gal)
Keterlarutan dalam / Keterlarutcampuran dengan	
Air:	Terlarut campur sepenuhnya.
Kandungan pelarut:	
Pelarut organik:	59.8% (VOC: 560 g/litre)

(Bersambung ke halaman 6)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 5)

Air: 10.0%

Kandungan pepejal: 15.4%
Maklumat lain Tiadak maklumat lanjut yang diperoleh.

10 Kestabilan dan kereaktifan

Kereaktifan Tiadak 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 Tiadak maklumat lanjut yang diperoleh.
Bahan tidak serasi: Tiadak maklumat lanjut yang diperoleh.
Produk penguraian yang berbahaya: Tiada produk penguaraian berbahaya yang diketahui.

*

11 Maklumat toksikologi

Maklumat tentang kesan toksikologi
Ketoksikan akut:

Nilai LD/LC50 yang berkaitan untuk pengelasan:		
CAS: 64-17-5 Etil alkohol		
Oral	LD50	7,060 mg/kg (rat)
Tersedut	LC50/4 h	20,000 mg/l (rat)
Proprietary Polyol		
Oral	LD50	>5,000 mg/kg (rat)
Derma	LD50	>2,000 mg/kg (rabbit)
Organic Acid		
Oral	LD50	5,040 mg/kg (mouse)
CAS: 111-42-2 diethanolamine		
Oral	LD50	1,600 mg/kg (rat)
Derma	LD50	12,200 mg/kg (rabbit)
CAS: 67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Derma	LD50	15,800 mg/kg (rabbit)
Tersedut	LC50/4 h	0.5 mg/l (ATE)

Kesan kerengsaan primer:
Kakisan atau kerengsaan kulit Merengsa kepada kulit dan mukus membran.
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:
Memudaratkan
Perengsa

*

12 Maklumat ekologi

Ketoksikan
Ketoksikan akuatik: Tiadak maklumat lanjut yang diperoleh.

(Bersambung ke halaman 7)

Helaian Data Keselamatan
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Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 6)

Keterusan dan keterdegradasikan Tiadak maklumat lanjut yang diperoleh.
Kelakuan dalam sistem alam sekitar:
Potensi bioakumulatif Tiadak maklumat lanjut yang diperoleh.
Mobiliti di dalam tanah Tiadak 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 Tiadak maklumat lanjut yang diperoleh.

*
13 Maklumat pelupusan

Kaedah rawatan sisa
Syor:
Tidak boleh dilupuskan bersama dengan sampah isi rumah. Jangan biarkan produk memasuki sistem pembentungan.

Pembungkusan yang tidak bersih:
Syor: Pelupusan mestilah dijalankan menurut peraturan rasmi
Agen pencuci yang disyorkan: Air, jika perlu, digunakan bersama dengan agen pencuci.

*
14 Maklumat pengangkutan

Nombor UN	
ADR, IMDG, IATA	UN1987
Nama penghantaran UN yang betul	
ADR	1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
IMDG	ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
IATA	ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL (ISOPROPYL ALCOHOL))

pengangkutan kelas bahaya

ADR, IMDG, IATA

Kelas	3 Cecair mudah terbakar.
Label	3
Kumpulan pembungkusan	
ADR, IMDG, IATA	II
Hazard persekitaran:	
Bahan cemar marin:	Tidak
Langkah perlindungan khas untuk pengguna	Amaran: Cecair mudah terbakar.
Stowage Category	B
Pengangkutan dalam pukal menurut Lampiran II MARPOL73/78 dan Kod IBC	Tidak berkenaan

(Bersambung ke halaman 8)

Helaian Data Keselamatan
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Nama dagang: 2125 Soldering Flux

(Sambungan halaman 7)

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 1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL)), 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).
Piktogram hazard

GHS02 GHS05 GHS08

Perkataan isyarat Bahaya

Komponen pelabelan yang menentukan bahaya:
diethanolamine
methanol
Glycolic Acid
Isobutil metil keton
Pernyataan hazard
H225 Cecair dan wap amat mudah terbakar.
H315 Menyebabkan kerengsaan kulit.
H318 Menyebabkan kerosakan mata yang serius.
H351 Disyaki menyebabkan kanser.
Pernyataan langkah perlindungan
P261 Elakkan daripada tersedut habuk/wasap/gas/kabus/wap/semburan.
P264 Basuh sebersih-bersihnya selepas mengendalikan bahan.
P280 Pakai sarung tangan pelindung/pakaian pelindung/perlindungan mata/perlindungan muka.
P303+P361+P353 JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.
P304+P341 JIKA TERSEDUT: Jika mangsa sukar bernafas, 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.
P308+P313 JIKA terdedah atau terkena bahan: Dapatkan nasihat/ rawatan perubatan.

(Bersambung ke halaman 9)

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

Tarikh cetak 06.10.2017 Disemak semula pada 06.10.2017

Nama dagang: 2125 Soldering Flux

(Sambungan halaman 8)

P403+P235	Simpan di tempat yang dialihudarakan dengan baik. Simpan di tempat sejuk.
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)
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
Toks. Akut 2: Ketoksikan akut – Kategori 2
Toks. Akut 3: Ketoksikan akut – Kategori 3
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 1: Ketoksikan organ sasaran khusus (pendedahan tunggal) – Kategori 1
STOT SE 3: Ketoksikan organ sasaran khusus (pendedahan tunggal) – Kategori 3
STOT RE 2: Ketoksikan organ sasaran khusus (pendedahan berulang) – Kategori 2

*** Data dibandingkan mengikut versi terdahulu yang diubah suai**

Safety Data Sheet
according to P.U.(A) 310/2013

Printing Date: 06.10.2017 Version number 4 Revision: 06.10.2017

*
1 Identification of the hazardous chemical and of the supplier

Trade name: 2125 Soldering Flux
Recommended use of the chemical and restrictions on use Flux Mematerí

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

Eye Dam. 1 H318 Causes serious eye damage.

Skin Irrit. 2 H315 Causes skin irritation.

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

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Hazard pictograms

GHS02 GHS05 GHS08

Signal word Danger

Hazard-determining components of labelling:
diethanolamine
methanol
Glycolic Acid
isobutyl methyl ketone
Hazard statements
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
Precautionary statements
P261 Avoid breathing dust/fume/ gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/ shower.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P403+P235 Store in a well-ventilated place. Keep cool.
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: 64-17-5	ethyl alcohol	Flam. Liq. 2, H225	40-55%
Trade Secret	Organic Acid	Eye Irrit. 2, H319	10-25%
CAS: 34590-94-8	(2-methoxymethylethoxy)propanol		5-10%

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CAS: 67-63-0	Isopropanol	Flam. Liq. 2, H225 Eye Irrit. 2, H319; STOT SE 3, H336	3-5%
CAS: 79-14-1	Glycolic Acid	Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H302	3-5%
CAS: 111-42-2	diethanolamine	Carc. 2, H351; STOT RE 2, H373 Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H302	3-5%
CAS: 67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 2, H330 STOT SE 1, H370	1-3%
CAS: 108-10-1	isobutyl methyl ketone	Flam. Liq. 2, H225 Acute Tox. 3, H331 Carc. 2, H351 Eye Irrit. 2, H319; STOT SE 3, H335	≥0.1-≤1%

*
4 First-aid measures

Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
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
Nitrogen oxides (NOx)
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: Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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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.

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: 64-17-5 ethyl alcohol	
PEL (Malaysia)	Long-term value: 1880 mg/m³, 1000 ppm
CAS: 34590-94-8 (2-methoxymethylethoxy)propanol	
PEL (Malaysia)	Long-term value: 606 mg/m³, 100 ppm (kulit)
CAS: 67-63-0 Isopropanol	
PEL (Malaysia)	Long-term value: 49 mg/m³, 10 ppm
CAS: 111-42-2 diethanolamine	
PEL (Malaysia)	Long-term value: 2 mg/m³, 0.46 ppm (kulit)
CAS: 67-56-1 methanol	
PEL (Malaysia)	Long-term value: 262 mg/m³, 200 ppm (kulit)
CAS: 108-10-1 isobutyl methyl ketone	
PEL (Malaysia)	Long-term value: 205 mg/m³, 50 ppm

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.

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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

*

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Liquid
Colour:	Light orange colour
Odour:	Alcohol-like
pH-value:	Not determined.
Change in condition	
Melting point/freezing point	Undetermined.
Initial boiling point and boiling range	77°C (170.6 °F)
Flash point:	18°C (64.4 °F)
Ignition temperature:	270°C (518 °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:	3.5Vol %
Upper:	15Vol %
Vapour pressure at 20°C (68 °F):	59hPa (44.3 mm Hg)
Density at 20°C (68 °F):	0.96g/cm³ (8.01 lbs/gal)
Solubility in / Miscibility with water:	Fully miscible.
Solvent content:	
Organic solvents:	59.8% (VOC: 560 g/litre)
Water:	10.0%
Solids content:	15.4%

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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.

*
11 Toxicological information

Information on toxicological effects
Acute toxicity

LD/LC50 values relevant for classification:		
CAS: 64-17-5 ethyl alcohol		
Oral	LD50	7,060 mg/kg (rat)
Inhalative	LC50/4 h	20,000 mg/l (rat)
Proprietary Polyol		
Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Organic Acid		
Oral	LD50	5,040 mg/kg (mouse)
CAS: 111-42-2 diethanolamine		
Oral	LD50	1,600 mg/kg (rat)
Dermal	LD50	12,200 mg/kg (rabbit)
CAS: 67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
Inhalative	LC50/4 h	0.5 mg/l (ATE)

Primary irritant effect:
Skin corrosion or irritation Irritant to skin and mucous membranes.
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:
Harmful
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.

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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.

*
14 Transportation information

UN-Number	
ADR, IMDG, IATA	UN1987
UN proper shipping name	
ADR	1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
IMDG	ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL))
IATA	ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL (ISOPROPYL ALCOHOL))

Transport hazard class(es)

ADR, IMDG, IATA

Class	3 Flammable liquids.
Label	3
Packing group	
ADR, IMDG, IATA	II
Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Amaran: Flammable liquids.
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

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Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

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 1987 ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), ISOPROPANOL (ISOPROPYL ALCOHOL)), 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:
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 GHS08

Signal word Danger

Hazard-determining components of labelling:
diethanolamine
methanol
Glycolic Acid
isobutyl methyl ketone
Hazard statements
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
Precautionary statements
P261 Avoid breathing dust/fume/ gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/ shower.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

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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 responsibilty 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
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
Acute Tox. 2: Acute toxicity - oral – Category 2
Acute Tox. 3: Acute toxicity - oral – Category 3
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 1: Specific target organ toxicity (single exposure) – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
*** Data compared to the previous version altered.**