

BYK-ES 80

Version 1.1
SDS_AU

Revision Date: 17.12.2024

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Print Date 18.12.2024

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : BYK-ES 80
Product code : 000000000000102250

Manufacturer or supplier's details

Company : BYK-Chemie GmbH
Address : Abelstrasse 45
46483 Wesel
Telephone : +49 281 670-23532
Telefax : +49 281 670-23533
E-mail address : GHS.BYK@altana.com
Emergency telephone number : 18000 74234 (toll –free number, access from Australia only)
+61 2 8014 4558

Importer

Company : IMCD Australia Pty Ltd
Level 1, 352 Wellington Road
Mulgrave
VIC 3170
Australia
Telephone: +61 3 8544 3100

Use of the Sub-
stance/Mixture : Additive to Increase Conductivity

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)
Short-term (acute) aquatic hazard : Category 3

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Long-term (chronic) aquatic hazard : Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before

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reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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 to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Solution of an alkylolammonium salt of an unsaturated acidic carboxylic acid ester

Components

Chemical name	CAS-No.	Concentration (% w/w)
2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol	-	≥ 50 - ≤ 100
iso-butanol	78-83-1	≥ 20 - < 25

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.

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Most important symptoms and effects, both acute and delayed	:	Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
		No information available. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.
Notes to physician	:	No information available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NO _x)
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Hazchem Code	:	•3Y

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
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 (see section 13).

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- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).
Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.
- Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
iso-butanol	78-83-1	TWA	50 ppm 152 mg/m ³	AU OEL
		TWA	50 ppm	ACGIH

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Hand protection
- Material : butyl-rubber
- Break through time : 120.00 min

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Remarks	:	Wear suitable gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	light yellow
Odour	:	not significant
Odour Threshold	:	No data available
pH	:	7 (20 °C) Concentration: 1 % Method: Universal pH-value indicator
Melting point/freezing point	:	< 0 °C Method: derived
Initial boiling point and boiling range	:	106.00 °C Method: derived
Flash point	:	40.00 °C Method: 48 (Abel-Pensky) DIN 51755
Evaporation rate	:	No data available
Flammability (liquids)	:	Sustains combustion
Upper explosion limit / Upper flammability limit	:	10.70 %(V)
Lower explosion limit / Lower flammability limit	:	1.50 %(V)
Vapour pressure	:	12 hPa (20.00 °C) Method: derived
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.0100 g/cm ³ (20.00 °C) Method: 4 (20°C oscillating U-tube)

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Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	immiscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	> 200 °C Method: DIN 51794
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Surface tension	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	No data available

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 625 mg/kg Method: Calculation method
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Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Acute oral toxicity	:	LD50 Oral (Rat, female): > 300 - < 2,000 mg/kg Method: OECD Test Guideline 423 GLP: yes
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iso-butanol:

Acute oral toxicity	:	LD50 (Rat, male): > 2,830 mg/kg Method: OECD Test Guideline 401 GLP: yes
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Acute dermal toxicity : LD50 (Rabbit, male): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks : May irritate skin.
May cause skin irritation and/or dermatitis.

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

iso-butanol:

Species : Rabbit
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Species : Rabbit
Result : Risk of serious damage to eyes.
Assessment : Risk of serious damage to eyes.
Method : OECD Test Guideline 405
GLP : yes

iso-butanol:

Species : Rabbit
Result : Eye irritation
Method : OECD Test Guideline 405
GLP : yes

Respiratory or skin sensitisation**Skin sensitisation**

May cause an allergic skin reaction.

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Not classified due to lack of data.

Product:

Remarks : Causes sensitisation.

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Test Type : Mouse Local Lymph Node assay (LLNA)
Species : Mouse
Assessment : May cause sensitisation by skin contact.
Method : OECD Test Guideline 429
Result : May cause sensitisation by skin contact.
GLP : yes

iso-butanol:

Test Type : Maximisation Test
Exposure routes : Dermal
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

Chronic toxicity**Germ cell mutagenicity**

Not classified due to lack of data.

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Result: No data available

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test (mouse lymphoma)

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive
GLP: yes

Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473

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Result: positive
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat (male)
Method: Mutagenicity (micronucleus test)
GLP: yes
Remarks: negative

Carcinogenicity

Not classified due to lack of data.

Product:

Remarks : No data available

Reproductive toxicity

Not classified due to lack of data.

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

STOT - single exposure

May cause respiratory irritation.
May cause drowsiness or dizziness.

Product:

Remarks : No data available

STOT - repeated exposure

Not classified due to lack of data.

Product:

Remarks : No data available

Repeated dose toxicity**Product:**

Remarks : No data available

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Species : Rat, male and female
NOAEL : 300 mg/kg
Application Route : Oral
Method : OECD Test Guideline 422
GLP : yes

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Aspiration toxicity

Not classified due to lack of data.

Product:

No data available

Components:**iso-butanol:**

No aspiration toxicity classification

Further information**Product:**

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Concentrations substantially above the TLV value may cause narcotic effects.
Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish :
Remarks: No data available

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Toxicity to fish : (Danio rerio (zebra fish)): 36 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 114 mg/l
aquatic invertebrates
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 91
plants
mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Test Type: Respiration inhibition

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Method: OECD Test Guideline 209

GLP: yes

iso-butanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1,430 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia pulex (Water flea)): 1,100 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,799
plants : mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 20 mg/l
aquatic invertebrates (Chron- : End point: Reproduction
ic toxicity) : Exposure time: 21 d
Test Type: semi-static test

Persistence and degradability**Product:**

Biodegradability : Remarks: No data available

Components:**2-Butenedioic acid (Z)-, ester with 1,2-propanediol, compd. with 2-(dibutylamino)ethanol:**

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301D
GLP: yes

iso-butanol:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: No data available

Components:**iso-butanol:**

Partition coefficient: n- : log Pow: 1
octanol/water : Method: OECD Test Guideline 117
GLP: yes

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No data available

Other adverse effects**Product:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : UN 1212
Proper shipping name : ISOBUTANOL SOLUTION
Class : 3
Packing group : III
Labels : 3

IATA-DGR

UN/ID No. : UN 1212
Proper shipping name : Isobutyl alcohol solution
Class : 3
Packing group : III
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 1212
Proper shipping name : ISOBUTANOL SOLUTION
Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-D
Marine pollutant : no

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**ADG**

UN number : UN 1212
Proper shipping name : ISOBUTANOL SOLUTION
Class : 3
Packing group : III
Labels : 3
Hazchem Code : •3Y

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****SECTION 16. OTHER INFORMATION**

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Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
AU OEL : Australia. Workplace Exposure Standards for Airborne Contaminants.

ACGIH / TWA : 8-hour, time-weighted average
AU OEL / TWA : Exposure standard - time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships;

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n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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