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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product	Benzalkonium Chloride 80% Solution (BKC 80%)	**Revision date**	2026-11-16
Version	1.0	**Brand**	Richest

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name	Benzalkonium Chloride 80% Solution (BKC 80%)
Synonyms	BKC 80%; Benzalkonium chloride solution; Alkyl dimethyl benzyl ammonium chloride; ADBAC 80%; Quaternary ammonium compound
CAS No.	8001-54-5
EC No.	616-786-9
Molecular formula	[C6H5CH2N(CH3)2R]+Cl− (R = C12–C16 alkyl; mixture of homologues)
Molecular weight	Variable (C12–C16 alkylbenzyldimethylammonium chloride mixture)
Relevant identified uses	Biocide, disinfectant and algaecide active for industrial and institutional water-treatment formulations; Cationic surfactant for sanitation and cleaning formulations; Antimicrobial raw material for suitably registered end-use products
Uses advised against	No specific uses advised against were identified in the reviewed sources.
Company	Richest Group
Address	No. 999, Jiangyue Rd, Minhang, Shanghai 201114, China
Telephone	0086 21 5017 5386
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Website	www.richest-group.com
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SECTION 2: Hazards identification

GHS Classification	Flammable liquid Category 3; acute oral toxicity Category 4; skin corrosion Category 1; serious eye damage Category 1; aquatic acute hazard Category 1; aquatic chronic hazard Category 1
Pictogram(s)	GHS02, GHS05, GHS07, GHS09
Signal word	Danger
Hazard statement(s)	H226 Flammable liquid and vapour; H302 Harmful if swallowed; H314 Causes severe skin burns and eye damage; H318 Causes serious eye damage; H400 Very toxic to aquatic life; H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	P210; P233; P240; P241; P242; P243; P260; P264; P270; P273; P280; P301+P330+P331; P303+P361+P353; P304+P340; P305+P351+P338; P310; P370+P378; P391; P403+P235; P405; P501
Other hazards	No other hazards were identified in the reviewed sources.

SECTION 3: Composition/information on ingredients

Component	Benzalkonium Chloride 80% Solution (BKC 80%)
CAS No.	8001-54-5

SECTION 3: Composition/information on ingredients	
EC No.	616-786-9
Classification	Flammable liquid Category 3; acute oral toxicity Category 4; skin corrosion Category 1; serious eye damage Category 1; aquatic acute hazard Category 1; aquatic chronic hazard Category 1
Concentration	79.00–80.00% w/v active benzalkonium chloride

SECTION 4: First-aid measures	
If inhaled	Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain immediate medical advice if respiratory symptoms or exposure to concentrated vapour/mist occurs.
In case of skin contact	Immediately remove contaminated clothing and rinse skin with plenty of water or shower. Obtain immediate medical attention; wash clothing before reuse.
In case of eye contact	Rinse cautiously with water for several minutes, removing contact lenses if present and easy to do. Continue rinsing and obtain immediate medical attention.
If swallowed	Rinse mouth. Do not induce vomiting. Contact a poison centre or doctor immediately and never give anything by mouth to an unconscious person.
Most important symptoms and effects	For the active ingredient: inhalation may cause sore throat, cough and laboured breathing; skin contact may cause redness, burns and pain; eye contact may cause redness, pain, blurred vision and severe deep burns; ingestion may cause abdominal pain, nausea, vomiting, burning sensation, diarrhoea and shock or collapse. Strong solutions above 10% are corrosive (ICSC 1584).
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to medical personnel.

SECTION 5: Fire-fighting measures	
Suitable extinguishing media	Use alcohol-resistant foam, dry chemical, carbon dioxide or water spray as appropriate. Cool closed containers with water spray from a safe distance.
Unsuitable extinguishing media	No data available
Special hazards arising from the chemical	Sanisol C-80 may produce irritating or toxic gases including carbon monoxide and phosgene in a fire (Kao SDS). The active ingredient decomposes on heating to toxic and corrosive fumes including ammonia, chlorine and nitrogen oxides (ICSC 1584).
Advice for firefighters	Wear self-contained breathing apparatus and full chemical-protective equipment. Contain firefighting water because the product is very toxic to aquatic life.

SECTION 6: Accidental release measures	
Personal precautions and emergency procedures	Avoid contact with the material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Environmental precautions	Prevent uncontrolled release to drains, soil and watercourses.
Methods for containment and cleaning up	Eliminate ignition sources and ventilate. Wear chemical-resistant gloves, protective clothing and eye/face protection. Stop the leak if safe, absorb with non-combustible inert material, and place in a suitable labelled container. Prevent entry into drains, soil and waterways and collect all residues.

SECTION 7: Handling and storage

Precautions for safe handling	Keep away from heat, sparks, open flames and hot surfaces. Ground/bond containers where applicable and use non-sparking equipment. Do not breathe mist or vapours, avoid all skin and eye contact, and wash thoroughly after handling.
Conditions for safe storage, including incompatibilities	Store locked up in a cool, well-ventilated place. Keep the container tightly closed and away from heat, sparks, open flames and incompatible materials; protect packages from damage and leaks.

SECTION 8: Exposure controls/personal protection

Occupational exposure limit values	For the isopropyl alcohol component of Sanisol C-80, the Kao SDS lists ACGIH TWA 200 ppm and STEL 400 ppm, and OSHA PEL TWA 400 ppm / 980 mg/m³ (2012 edition). These limits are for isopropyl alcohol, not benzalkonium chloride.
Biological limit values	No biological limit values were identified in the reviewed sources.
Appropriate engineering controls	Use closed transfer or local exhaust ventilation, explosion-protected equipment where required, and accessible safety shower and eyewash.
Eye/face protection	Wear chemical splash goggles plus face shield, chemical-resistant gloves and protective clothing. Use suitable respiratory protection where mist/vapour exposure is not adequately controlled.
Skin and body protection	Wear chemical splash goggles plus face shield, chemical-resistant gloves and protective clothing. Use suitable respiratory protection where mist/vapour exposure is not adequately controlled.
Respiratory protection	Use suitable respiratory protection if exposure limits may be exceeded or dust, mist or vapour is generated.
Thermal hazards	Keep away from ignition sources. Sanisol C-80 has a closed-cup flash point of 53 °C; the active ingredient decomposes on heating (Kao SDS; ICSC 1584).

SECTION 9: Physical and chemical properties

Physical state	Pale-yellow liquid with mild odour
Colour	Light yellow for Sanisol C-80 (Kao SDS); colourless to pale yellow for Honry BKC 80%.
Odour	Slightly characteristic for Sanisol C-80 (Kao SDS). ICSC 1584 describes the active ingredient as having a characteristic odour.
Melting point / freezing point	−10°C
Boiling point / boiling range	101°C
Flammability	Sanisol C-80 is classified as a flammable liquid and vapour, Category 3 (Kao SDS). ICSC 1584 describes the active ingredient as combustible.
Explosion / flammability limits	No data available
Flash point	41°C
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH	7-9 for a 3% solution of Sanisol C-80 (Kao SDS); 6.0-8.0 for a 1% aqueous solution of Honry BKC 80%.
Viscosity	Viscous solution, qualitative only, for generic benzalkonium chloride (ChemicalBook SDS).
Solubility	Completely soluble in water
Partition coefficient n-octanol/water	No data available

SECTION 9: Physical and chemical properties	
Vapour pressure	No data available
Density and/or relative density	0.96 g/cm³ at 25°C in the SDS; finished-good relative-density specification is 0.9400–0.9700
Relative vapour density	No data available
Particle characteristics	Not applicable (liquid).
Pour point	−10°C
Dynamic viscosity	<100 mPa·s at 25°C
Storage temperature	2-8 °C

SECTION 10: Stability and reactivity	
Reactivity	Sanisol C-80 is stable in general (Kao SDS). Benzalkonium chloride has indefinite stability when stored in closed containers according to HSDB via PubChem.
Chemical stability	chemical_stability: Stable under the storage conditions stated in the selected supplier SDS.
Possibility of hazardous reactions	No self-reactivity is reported for Sanisol C-80 (Kao SDS).
Conditions to avoid	Heat, flames, sparks, static discharge and container damage.
Incompatible materials	Avoid strong oxidising agents and other formulation incompatibles identified by the batch-specific SDS.
Hazardous decomposition products	For Sanisol C-80: carbon monoxide and phosgene may be produced in a fire (Kao SDS). For the active ingredient: ammonia, hydrogen chloride/chlorine and nitrogen oxides may be produced on heating (ICSC 1584; HSDB via PubChem).

SECTION 11: Toxicological information	
Acute effects	Harmful if swallowed; causes severe skin burns and serious eye damage.
Local effects	Corrosive exposure may cause permanent eye injury and burns to skin, mouth and gastrointestinal tract.
Acute toxicity	Sanisol C-80 is classified as harmful if swallowed or in contact with skin and causes severe skin burns and eye damage (Kao SDS). For the active ingredient, not the whole 80% formulation: rat oral LD50 values include 240 mg/kg, male 1100 mg/kg, female 280.8 mg/kg and combined male/female 304.5 mg/kg (HSDB via PubChem); chain composition and test material differ between entries.
Irritation corrosion	The active ingredient is corrosive to eyes, skin and respiratory tract and corrosive on ingestion; aspiration of a swallowed solution may cause chemical pneumonitis (ICSC 1584).
Skin corrosion irritation	GHS classification: Flammable liquid Category 3; acute oral toxicity Category 4; skin corrosion Category 1; serious eye damage Category 1; aquatic acute hazard Category 1; aquatic chronic hazard Category 1; H226 Flammable liquid and vapour H302 Harmful if swallowed H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects
Serious eye damage irritation	GHS classification: Flammable liquid Category 3; acute oral toxicity Category 4; skin corrosion Category 1; serious eye damage Category 1; aquatic acute hazard Category 1; aquatic chronic hazard Category 1; H226 Flammable liquid and vapour H302 Harmful if swallowed H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects

SECTION 12: Ecological information	
Hazard	H400 and H410: very toxic to aquatic life with long lasting effects.
Transport environment	Marine pollutant under the selected 80% product transport information.
Release control	Contain spills and contaminated firefighting or wash water; never discharge to natural waters or untreated drains.
Aquatic toxicity	Data on benzalkonium chloride in the Sanisol C-80 SDS: red killifish 96 h LC50 1.6 mg/L and Daphnia 24 h EC50 0.1 mg/L. ICSC 1584 classifies the active ingredient as very toxic to aquatic organisms.
Persistence degradability	Sanisol C-80 SDS reports 97% biodegradation by BOD in 10 days in Modified MITI Test I (OECD 301C) for related benzyl-C10-16-alkyldimethyl quaternary ammonium compounds, not for the whole C-80 mixture. HSDB via PubChem describes benzalkonium chloride as stable to microbial degradation but reports degradation with acclimated activated sludge; these are different test systems.
Bioaccumulation	Freshwater-fish bioconcentration is expected to be low because benzalkonium chloride is strongly adsorbed to sediment (HSDB via PubChem).
Mobility	Reported Koc range 640,389-6,171,657, indicating that the active ingredient is immobile in soil (HSDB via PubChem).
Aquatic hazard classification	GHS aquatic-hazard classification: Flammable liquid Category 3; acute oral toxicity Category 4; skin corrosion Category 1; serious eye damage Category 1; aquatic acute hazard Category 1; aquatic chronic hazard Category 1; H226 Flammable liquid and vapour H302 Harmful if swallowed H314 Causes severe skin burns and eye damage H318 Causes serious eye damage H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects

SECTION 13: Disposal considerations	
Product disposal methods	Dispose of contents, contaminated absorbents and packaging through an authorised hazardous-waste contractor in accordance with local requirements. Do not discharge to sewer or surface water.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with local regulations.

SECTION 14: Transport information	
UN Number (ADR/RID, IMDG, IATA)	2920
UN Proper Shipping Name	CORROSIVE LIQUIDS, FLAMMABLE, N.O.S. (Alkyldimethylbenzylammonium chloride)
Transport hazard class(es)	8 (subsidiary risk 3)
Packing group	II
Environmental hazards / Marine pollutant	Yes; marine pollutant and very toxic to aquatic life with long lasting effects
Special precautions for user	Keep upright and tightly closed, away from ignition sources and incompatible goods. Prevent leaks from entering drains or surface water; use the actual formulation SDS for each shipment.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	identity: Benzalkonium chloride C12–C16 homologue mixture; CAS 8001-54-5; EC 616-786-9; biocide_use: End-use disinfectant, biocide and algaecide claims require the registrations and label approvals applicable in the destination market.; customs: HS 34021200 is indicative; confirm against the actual composition and destination tariff.

SECTION 16: Other information

Full text of H-Statements	H226 Flammable liquid and vapour; H302 Harmful if swallowed; H314 Causes severe skin burns and eye damage; H318 Causes serious eye damage; H400 Very toxic to aquatic life; H410 Very toxic to aquatic life with long lasting effects
Revision date	2026-11-16
Version	1.0
References	Supplier technical documents, public SDS/COA/TDS and regulatory sources reviewed. Public data citations are listed below. Public data sources: Product Specification Sheet: Benzalkonium Chloride 80%: https://www.ecopl.org/assets/img/main/pdf/pss/pss-benzalkonium-chloride-80.pdf | Safety Data Sheet: Benzalkonium Chloride 80%: https://www.ecopl.org/assets/img/main/pdf/msds/msds-benzalkonium-chloride-80.pdf | Benzalkonium Chloride 80 product and packaging information: https://www.ecopl.org/products/benzalkonium-chloride-80 | Safety Data Sheet: Benzalkonium Chloride, 80% ethanol-containing comparison formulation: https://sds.laboratoriumdiscounter.nl/MSDS_Benzalkonium_Chloride_GB.pdf | Kao Industrial (Thailand) Safety Data Sheet: SANISOL C-80, KCDS-No. 106036-06, 1 March 2016: https://www.jlaichem.com/datasheets/Benzalkonium-Chloride-80-Sanisol-C-80-Safety-Data-Sheet.pdf | ICSC 1584 - Benzalkonium Chloride: https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_lang=en&p_card_id=1584&p_version=1 | Honry Chemical Benzalkonium Chloride 80% product specification: https://www.honrychemical.com/products/benzalkonium-chloride-80/ | ChemicalBook Safety Data Sheet: Benzalkonium chloride, CAS 8001-54-5: https://www.chemicalbook.com/msds/benzalkoniumchloride.htm | PubChem Compound Record: Benzalkonium chloride, CID 3014024: https://pubchem.ncbi.nlm.nih.gov/compound/3014024
Abbreviations	CAS: Chemical Abstracts Service; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; SDS: Safety Data Sheet.
Disclaimer	The information in this SDS applies to the specified product and is provided in good faith based on information available to Richest Group at the date of issue. It describes health, safety and environmental requirements and does not constitute a guarantee of product properties. Users must assess suitability and comply with applicable regulations.