

JIS

JAPANESE INDUSTRIAL STANDARD

**Technical terms for
surface active agents**

JIS K 3211—1990

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Technical terms for surface active agents

K 3211-1990

1. Scope

This Japanese Industrial Standard specifies main terms and their definitions used in industry of surface active agents.

2. Classification of Terms

Terms shall be classified into following two classes.

- (1) General basic terms (term number: 1001 to 1170)
- (2) Applied product terms (term number: 2001 to 2151)

3. Terms, Definitions and Informative References

Terms and definitions shall be as follows:

Further, for informative reference, the English equivalent is shown.

Remark: Among the English equivalent those underlined show the terms specified in ISO 862-1984.

Corresponding International Standard:

ISO 862 Surface active agents-Vocabulary

(1) General Basic Terms

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1001	アニオン界面活性剤	ANION KAIMEN- KASSEIZAI	A surface active agent which ionizes in water and the part indicating surface activity is anion.	anionic surface active agent	
1002	アルキルフェノール	ARUKIRU FENŌRU	A compound in which a piece of hydrogen atom of benzene nucleus is substituted with hydroxyl group, and the remaining not less than 1 piece of hydrogen atoms are substituted by alkyl group. The compound substituted by one piece of alkyl group of 8 or 9 in number of carbons mainly is used as the raw material of nonionic surface active agent.	alkylphenol	
1003	アルキルベンゼン	ARUKIRU BENZEN	Generic name of hydrocarbons in which one or more hydrogen atoms of benzene nucleus are substituted by alkyl group. The compound substituted mainly by one piece of alkyl group of 12 in number of carbons is used as raw material for anionic surface active agent.	alkylbenzene, alkylbenzen	
1004	アルファオレフィン	ARUFA OREFIN	Hydrocarbon in which carbon at end-carbon bond is double bond. The mixture of 10 to 20 in carbon number is used as anionic surface active agent by performing sulfonation and neutralization.	α -olefin	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1005	泡	AWA	Generic name to be used for definition of both of bubble and foam.	foam, froth, bubble	
1006	泡立ち	AWADATI	The fact capable of foaming or the state it is maintained.	foaming	
1007	泡立ち試験	AWADATI-SIKEN	This is same as 1033 foaming test.	foaming test	
1008	陰イオン界面活性剤	IN-ION-KAIMEN-KASSEIZAI	This is same as 1001 anionic surface active agent.	anionic surface active agent	
1009	エアロゾル エアロゾル	ĒROZORU EAROZORU	The system in which micro grains of liquid or solid are dispersed in the gas to be floated.	aerosol	
1010	液晶	EKISYŌ	The state that has property as crystal, having fluidity but no optical isotropy and indicating double refraction, or substance indicating such condition.	liquid crystal	
1011	エステル化	ESUTERU-KA	Generic name of reaction to generate ester. Usually it is the dehydration reaction of acid and alcohol.	esterification	
1012	エタノール可溶分	ETANŌRU-KAYŌBUN	When the synthetic detergent is dissolved in ethanol according to the specified method, the dissolved substance or its quantity expressed by percentage (Refer to JIS K 3362).	ethanol soluble matter	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1013	エタノール不溶分	ETANŌRU-HUYŌBUN	When soap is dissolved in 95 % ethanol according to the specified method, the remaining substance without dissolving or its amount expressed by percentage (Refer to JIS K 3304).	ethanol insoluble matter	
1014	エチレンオキシド	ETIREN-OKISIDO	A compound to be expressed by $\text{H}_2\text{C}-\text{CH}_2$. It is obtained by oxidation of ethylene and used as the raw material for nonionic surface active agent.	ethylene oxide	
1015	HLB (えっちえるびー)	ETTI-ERU-BĪ	A scale to express the degree of hydrophilic property and lipophilic property (hydrophobic property) of surface active agent. The agent is as stronger in hydrophilic property, so the value becomes larger. It is same as hydrophile-lipophile balance.	HLB (hydrophile-lipophile balance)	
1016	エトキシル化	ETOKISIRU-KA	A reaction to introduce $-(\text{C}_2\text{H}_4\text{O})$ nH by reacting the compound having active hydrogen with ethylene oxide.	ethoxylation, oxyethylation	
1017	エプトン法	EPUTON-HŌ	One of quantitative analysis of anionic surface active agent. A measuring method utilizing property to generate complex with cation surface active agent.	Epton method	
1018	エマルション	EMARUSYON	A system in which one liquid out of two liquids not to be dissolved mutually becomes particles and it is dispersed in the other liquid.	emulsion	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1019	LB 膜 (えるびーまく)	ERUBĪ-MAKU	The membrane overlapped with several layers of monomolecular film on a solid surface. It is based on the names of originators Langmuir and Blodgett. It is called also built-up film.	LB membrane	
1020	塩析	ENSEKI	Depositing of substance preliminarily dissolved by adding nonorganic salt or the like to aqueous solution of a certain substance. It is utilized for manufacturing of soap.	graining out, salting out	
1021	O/W 型 (おーだぶりゅーがた)	Ō-DABURYŪ-GATA	This is same as 1090 oil-in-water type.	oil-in-water type	
1022	界面活性	KAIMEN-KASSEI	A property to change remarkably the surface property to lower the interfacial tension by causing adsorption on the surface.	surface activity	
1023	界面活性剤	KAIMEN-KASSEIZAI	A substance having suitable hydrophilic group and lipophilic group, which induces surface activity by being dissolved in the liquid at low concentration.	surface active agent, surfactant	
1024	界面現象	KAIMEN-GENSYŌ	A phenomenon to be caused by appearing remarkably of properties of surface and interfacial surface. The capillary phenomenon, wetting, foaming, etc. are representative example.	surface phenomenon, interfacial phenomenon	
1025	界面自由エネルギー	KAIMEN-ZIYŪ-ENERUGI	Free energy which surfaces of liquid and solid have excessively in comparing with internal part.	surface free energy	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1026	界面張力	KAIMEN-TYÖRYOKU	The surface free energy per unit area.	<u>interfacial tension</u>	
1027	カチオン界面活性剤	KATION-KAIMEN-KASSEIZAI	A surface active agent of which the part is ionized in water and indicates the surface activity, is cation.	<u>cationic surface active agent</u>	
1028	可 溶 化	KAYŌKA	A phenomenon in which a substance difficult in dissolving in solvent becomes such a state that it is dissolved in solvent by dissolving in micelle of surface active agent.	<u>solubilization</u>	
1029	カルボキシメチルセルロース	KARUBOKISI-METIRU-SERURŌSU	Sodium salt of ether of cellulose and glycolic acid. It is obtained by reaction of alkaline cellulose and sodium mono-chloroacetate.	<u>carboxymethyl-cellulose (CMC)</u>	
1030	カルボン酸塩	KARUBON SAN-EN	Generic name of salts of organic compound having carboxyl group (-COOH).	<u>carboxylate</u>	
1031	気 泡	KIHŌ	A phase of gas enclosed in inside of liquid and solid, having macroscopic size.	<u>bubble</u>	
1032	起 泡 力	KIHŌRYOKU	A capacity to make comparatively stable foams by adding outer force such as stirring to solution. One of the representative performance of surface active agent.	<u>foaming power</u>	

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1033	起泡力試験	KIHÖRYOKU-SIKEN	The method to measure the foaming power by stirring and blowing-in gas. The Ross Miles Test is the representative example.	foaming test
1034	逆ミセル	GYAKU-MISERU	Ensemble body of surface active agent molecules collected by directing hydrophilic group toward inside and hydrophobic group toward out (solvent) side reversely in water in organic solvent.	reversed micelle
1035	吸着	KYŪTYAKU	A phenomenon that a substance in gas phase or fluid face is different in concentration from the internal part of phase at the interface of the phase and the different phase (solid phase, liquid phase).	adsorption
1036	吸着質	KYŪTYAKU-SITU	A substance to adsorb at the surfaces and interface of solid and liquid.	adsorbate
1037	吸着層	KYŪTYAKU-SŌ	A layer formed by adsorption of a substance on the surface or interface.	adsorption layer
1038	吸着等温式	KYŪTYAKU-TŌON-SIKI	A formula to indicate the relation between the quantity of substance adsorbed on the surface and interface of solid and liquid at a definite temperature and the concentration of the substance (in the case of gas, the pressure).	adsorption isotherm formula

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1039	吸着等温線	KYŪTYAKU-TŌON-SEN	A curve to indicate the relation between the quantity of substance adsorbed on the surface and interface of solid and liquid at a definite temperature and the concentration of the substance (in the case of gas, the pressure).	adsorption isotherm	
1040	吸着膜	KYŪTYAKU-MAKU	A film formed by adsorption of substance in the surface or interface.	adsorption film	
1041	境界潤滑	KYŌKAI-ZYUNKATU	The lubrication in the boundary where the thickness of boundary layer becomes thick at several molecule to several ten molecule layer and the rule of hydrodynamics such as viscosity of oil, and the like have become impossible to apply.	boundary lubrication	
1042	凝集	GYŌSYŪ	A phenomenon that colloidal particles and the like adhere mutually in medium and vary to large particles.	flocculation, aggregation	
1043	凝集エネルギー	GYŌSYŪ-ENERUGĪ	The stabilization energy generated when molecules are ensembled from bulk condition so as attraction to act between molecules.	cohesive energy	
1044	極性基	KYOKUSEI-KI	An atomic group to give the molecule a large dipole moment. Amino group, carboxyl group, hydroxyl group, etc. are the representative examples.	polar group	
1045	キレート化剤	KIRĒTO KA-ZAI	The agent to sequester metal ions by chelating bond.	chelating agent	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1046	金属イオン封鎖剤	KINZOKU-ION- HŪSAZAI	An agent having action to form metal ion and soluble complex salt in aqueous solution and to inhibit activity of metal.	sequestering agent	
1047	曇り点	KUMORI TEN	A temperature to begin white turbidity when raising the temperature of aqueous solution of nonionic surface active agent. Usually, white turbidity is caused and the phase separation is generated.	cloud temperature, cloud point	
1048	クラフト点	KURAHUTO-TEN	When the solubility of surface active agent into water is measured by changing the temperature, the temperature when the solubility becomes large rapidly.	Krafft temperature, Krafft point	
1049	グリセリン	GURISERIN	The representative trivalent alcohol indicated by $\text{CH}_2\text{OH} \cdot \text{CHOH} \cdot \text{CH}_2\text{OH}$. This is obtained by hydrolysis or synthesis of natural fats and oils.	glycerol, glycerin, glycerine	
1050	蛍光増白剤	KEIKŌZŌHAKUZAI	A dyestuff to absorb near ultraviolet light, to generate purple blue or blue fluorescence and to make fibres feel to be white. It is used for brightening paper, pulp, other than fibre product and it is compounded with detergent.	fluorescent brightener	
1051	ゲル	GERU	The condition where the motion characteristic is lost by making net aperture structure with connecting in series colloidal particles or bridging high molecular chain or the substance to indicate the condition.	gel	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1052	ゲル化	GERU-KA	A phenomenon that the solution and sol become gel by variation of conditions such as temperature, pH, salt concentration, etc.	gelation	
1053	けん化	KENKA	A reaction to generate soap by hydrolysis of fats and oils or ester by alkali. The neutralization reaction of fatty acid by alkali is contained, too.	saponification	
1054	けん化価	KENKA-KA	Number of milligrammes of potassium hydroxide required for complete saponification of 1 g of fats and oils of sample.	saponification value	
1055	懸濁	KENDAKU	A phenomenon that the fine grains of solid disperse in liquid or the dispersed system. In the case of latter, it is same as 1056 the suspension.	suspension	
1056	懸濁液	KENDAKU-EKI	The matter where solid fine grains are dispersed in liquid, of which grain size is comparatively large.	suspension	
1057	懸濁質	KENDAKU-SITU	Grains dispersed in suspension or the substance composing the grain.	suspensoid	
1058	コアセルベーション	KOASERUBESYON	A phenomenon to cause liquid/liquid phase separation by variation of conditions of high molecule and solution of surface active agent. The two phases contain the same component at different rate and keep equilibrium.	coacervation	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1059	硬化油	KŌKA YŪ	Solid fats and oils to be obtained by adding hydrogen to fats and oils containing unsaturated fatty acid to saturate a part of unsaturated part or the whole part.	hardened oil, hydrogenated oil	
1060	高級アルコール	KŌKYŪ-ARUKŌRU	Generic name of aliphatic monovalent alcohols of not less than 8 in carbon number. There are those made of natural fats and oils as raw material and those made of petroleum chemical products as raw material.	higher alcohol	
1061	硬水	KŌSUI	The water containing comparatively large amount of salts such as calcium, magnesium, etc. and generally it means the water containing not less than 100 mg/l as calcium oxide.	hard water	
1062	合成アルコール	GŌSEI-ARUKŌRU	Generic name of higher alcohol obtained by using petroleum chemical products as raw material. Relative to the higher alcohol made of natural fats and oils as raw material, the synthetic high grade alcohol is called simply synthetic alcohol.	synthetic alcohol	
1063	高分子界面活性剤	KŌBUNSI-KAIMEN-KASSEIZAI	The surface active agent of comparatively high molecular weight.	high molecular weight surface active agent, polysoap	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1064	コロイド溶液	KOROIDO-YŌEKI	The colloidal particles dispersed in medium. There are case of true solution containing extremely large molecules and grains of size of degree of micell and the case of thermodynamically unstable dispersion liquid containing larger grains.	colloidal solution	
1065	コロイド粒子	KOROIDO-RYŪSI	Generic name of particles of degree 1 μm to 1 nm, positioning at the intermediate between the coarse grain and the size of molecule.	colloidal particle	
1066	再汚染	SAI-ŌSEN	Contaminating by again adhering of soil once removed from the substances of cloth and the like.	soil redeposition	
1067	サスペンション	SASUPENSYON	Same as 1055 suspension.	suspension	
1068	酸 価	SANKA	Number of milligrammes of potassium hydroxide required for neutralization of free fatty acid in 1 g of fats and oils.	acid value	
1069	酸化エチレン	SANKA-ETIREN	Same as 1014 ethylene oxide.	ethylene oxide	
1070	酸化プロピレン	SANKA-PUROPIREN	Same as 1142 propylene oxide.	propylene oxide	
1071	CMC (シーエむしー)	SĪ EMU SĪ	Same as 1029 carboxymethylcellulose (CMC).	carboxymethyl-cellulose (CMC)	
1072	cmc (シーエむしー)	SĪ EMU SĪ	Same as 1167 critical micelle concentration (cmc).	<u>critical micelle</u> <u>concentration</u> (cmc)	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1073	COD (しーおーでいー) 化学的酸素要求量	SĪ Ō DEĪ KAGAKUTEKI- SANSO- YŌKYŪRYŌ	A contamination index of water in exhaust water and water region in environment, which is the substance to be oxidized contained in water and expressed by quantity of oxygen (mg/l) corresponding to quantity of oxidizing agent consumed by mainly organic substance. It is called also chemical oxygen demand.	chemical oxygen demand (COD)	
1074	湿潤	SITU ZYUN	Same as 1125 wetting.	<u>wetting</u>	
1075	湿潤性	SITU ZYUN-SEI	Degree of wettability. The contact angle becomes its criterion.	<u>wetting tendency,</u> <u>wettability</u>	
1076	脂肪	SIBŌ	Solids out of fats and oils at ordinary temperature. It is also used as synonym for fats and oils containing fatty acid of liquid at ordinary temperature in some cases.	fat	
1077	脂肪アルコール	SIBŌARUKŌRU	High alcohol to be obtained from natural fats and oils or wax as raw material.	fatty alcohol	
1078	脂肪酸	SIBŌ-SAN	Generic name of chain carboxylic acid having a carboxylic group. In narrow definition it means the long chain mono-carboxylic acid constituting natural fats and oils.	fatty acid	
1079	縮合りん酸塩	SYUKUGŌ-RINSAN- EN	A phosphate compound containing two or more phosphorus, which is obtained by dehydration condensation reaction of phosphoric acid. Sodium triphosphate is the representative example.	condensed phosphate, polyphosphate	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1080	純石けん分	ZYUN-SEKKEN BUN	Soap content (fatty acid neutralized substance) in soap sample.	pure soap content	
1081	植物油	SYOKUBUTU YU	Fats and oils to be obtained from seeds, fruits, kernels, germs, etc. of vegetable as raw material.	vegetable oil	
1082	親水基	SINSUIKI	A functional group to adapt water out of molecules of surface active agent and the like.	hydrophilic group	
1083	親水性	SINSUISEI	A property to indicate affinity to water.	hydrophilicity, hydrophilic property	
1084	親水性親油性比	SINSUISEI- SIN'YUSEI-HI	Same as 1015 HLB.	hydrophile-lipophile balance (HLB)	
1085	真性コロイド	SINSEI-KOROIDO	Solution of substance of which one molecule has already size of colloid dimension such as protein, synthetic high molecules or its molecule. It is also called molecular colloid.	eu colloid	
1086	浸透	SINTŌ	A phenomenon that liquid penetrates into inside of solid texture such as paper, fibre, etc.	penetration	
1087	親油基	SIN'YUKI	The functional group to adapt the oil in molecules of surface active agent, or the like. It is usually the hydrogen carbide group.	lipophilic group	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
1088	親油性	SIN'YUSEI	The property to indicate affinity to oil.	lipophilicity, lipophilic property	
1089	水酸基価	SUISANKI-KA	Same as 1137 hydroxyl value.	hydroxyl value	
1090	水中油型	SUITYŪ-YUGATA	The emulsion type of which dispersion medium (continuous phase) is water and dispersion phase is oil. It is expressed also as 1021 O/W type.	oil-in-water type, O/W type	
1091	スルホン化	SURUHON-KA	The reaction to introduce sulfonic acid group ($-\text{SO}_3\text{H}$) into organic compound such as alkylbenzene, olefin, etc.	sulfonation	
1092	スルホン化油	SURUHON-KAYU	Sulfonated and neutralized fatty oil, which is a type of anionic surface active agent.	sulfonated oil	
1093	生分解	SEI-BUNKAI	Decomposition of organic compound by action of microorganism.	biodegradation	
1094	ゼータ電位 (ゼーたでんい)	ZĒTA-DEN'I	A part to react effectively to interface electrokinetic phenomenon out of potential differences at interface of solid and liquid. That is the potential difference between the fixed phase of liquid molecules on the solid surface and the liquid internal part when the solid and liquid move relatively, and it is called also interfacial dynamic potential.	zeta potential	
1095	ゼオライト	ZEORAITO	Water containing alkaline metal salt of crystalline aluminosilicate or alkaline earth metal salts. It is used also as builder for detergents.	zeolite	