

Khulna University of Engineering & Technology

Pre-define Tests of Department of Chemistry

Sl. No.	Name of Test	Test Parameter
1.	Chemical Analysis of Fertilizer	
	TSP	
	SSP	
	NPKS	N, PO ₄ ³⁻ , K, S
	Ammonium Sulphate	N, S
	Zinc Sulphate	Zn, S
	FMP	
	DCP (Dicalcium Phosphate)	Al ₂ O ₃ , Fe ₂ O ₃ , CaO, Na ₂ O, P ₂ O ₅
	Phosphogypsum	
	Gypsum	SiO ₂ , Insoluble Residue, Al ₂ O ₃ , Fe ₂ O ₃ , CaO, MgO, SO ₃ etc.
	MOP, Urea, Borax, Boron, Rock Phosphate, Magnesium Sulphate, Cheated Zinc, Organic Fertilizer, DAP /Diammonium Hydrogen Phosphate	% Composition
2.	Chemical Analysis of Metals and Non-metals in Rod, Flat Bar, Pipe, Alloys, Steel, Cast Iron	Fe, Mn, Si, Cr, P, S, C, Ni, B, Co, CE, etc.
	Chemical Analysis of Galvanized Iron Sheet	Zn, Ni, Cu, Cr etc., Coating Materials
3.	Chemical Analysis of Essential Oil/Fat/Liquid	Solubility, Density, Viscosity, pH, Iodine Value, Saponification Value, Ultrasonic Velocity, Acid Value
4.	Chemical Analysis of Poultry feed, Fish Feed, Dairy Feed and Animal Food & Food Products	pH, Chemical Components, Antibiotics (Nitrofurans, Chloramphenicol, etc), Minerals, Enzymes Activity, Probiotics, Food Color, Melamine, Acidity/ Alkalinity, Acid Soluble Ash/Acid Insoluble Ash, Acid Value, Acesulfame-K, Amylase Activity, Amino Acids, Arsenic, Aspergillus's Flavors c. f. u/g, Benzoic Acid and Benzoate, Beta Carotene, Bicarbonate, Biotin, Carbonate, Clostridium sp, Calcium, Campylobacte sp, Copper, Cadmium, Carbohydrate (only), Caffeine, Cellulose, Chlorine, Choline, Chlorotetra-cycline,

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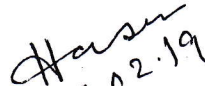
Pre-define Tests of Department of Chemistry

	Cholesterol, Conductivity, Chondroitin Sulphate, Curcumin Content, Crystal Violet, Diastase Value, Density, Dextrin, Dextrose, DDT, Heptachlor, Dry Matter, E-coli, Gas Composition Analysis, Faecal Coli form, Fat Free Cocoa Solid, Free Fatty Acid, Fat, Fatty Acids Composition, Saturated Fat, Unsaturated Fat, Flavor, Formalin, Folic Acid, Fructose, Fungi (Allergy Producing), Fungi (Storage), Fungi (Xerophilic), Glucoamylase, Glucosamine Sulfate-Na, Gluten Whey Gluten (dry), Glycogen, Granularity, Hardness, Histamine, Humicola Species, Hydrogen Sulphide Producing, Bacteria (Presence), Hydrose, Identification of Animal, Fat/Vegetable Fat, Insoluble Matter in Ether, Insoluble Impurities, Inositol, Iodine, Iodine value, Iron, Listeria Monocytogenes, Lactose, Lecithin, Lead, Lycopene, Maltodextrin, Magnesium, Manganese, Melting Point, Mercury, Melamine, Malachite Green, Milk Solid, Milk Fat, Moisture, Molasses Purity, Monosodium Glutamate, Nicotine, Nitrate, Nitrite, Nickel, Nitrofurantoin, Non-Volatile Ether Extract, Ochratoxin A, Oxytetracycline, Oil/Grease Content of Water, Oleo Resin, Organoleptic Test, Optical Rotation, P. Citrinum, Pectin, Protein, Pectinase, Peroxide Value, Peroxides, Potassium, Phosphorous, Pesticide Residue Analysis of Organochlorine and Organophosphate, Potassium, Meta Bisulphite, Protease Activity, Psychrophilic Bacteria c.f.u/g, Polarization, Reducing Sugar, Residual Chlorine in Water, Salmonella Species (Presence), Saponification Value, Sodium Tripolyphosphate, Sodium Benzoate, Solubility Test, Specific Gravity, Spore Forming Bacteria c. f. u/g, Staphylococcus aureus, Sterility Test, Streptococci (Total count), Sucrose/Sugar, Sulphur, Sulphate, Sulphated Ash, Taste, Tetracycline, Theobromine, Total Acid, Total Lipids, Total Mould Count (Mesophilic), Triglyceride, Trypsin Inhibitor, Turbidity,
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		Un-Saponifiable Matter, Urea, Venilline Test, Viscosity, Vibrio Cholerae/V., Parahaemolyticus, Vitamin A, Vitamin C, Vitamin D, Vitamin B3, Vitamin E, Vitamin B1, Vitamin B2, Vitamin B5, Vitamin B6, Vitamin B12, Vitamin K, Yeast Activity Test, Yersinia enterocolitica, Radiation test in food, γ -Radiation test in food, Zinc etc.
5.	Chemical Analysis of Human Food & Food Products	A. Achraceas, Acid Producing Bacteria c.f.u/g, Acidity/ Alkalinity, Acid Soluble Ash /Acid Insoluble Ash, Acid Value, Acesulfame-K, Aflatoxin (B1, B2, G1 & 2), Alcohol, Alcohol Extract, Alcoholic Acidity, Amylase Activity, Amino Acids, Appearance, Arsenic, Ash, Aspartame, Aspergillus's Flavors c. f. u/g, Assay of Antibiotics (Unknown), Benzoic Acid and Benzoate, Beta Carotene, Bicarbonate, Biotin, BOD, Carbonate, Clostridium sp, Calcium, Campylobacte sp, Copper, Cadmium, Carbohydrate (only), Caffeine, Cellulose, Chlorine, Chocolate Compound, Chloramphenicol, Choline, Chlorotetracycline, Cholesterol, Chocolate Compound, CO ₂ , Color, COD, Color (ICUMSA), Crude Fiber, Conductivity, Chondroitin Sulphate, Cocoa Solid (Total), Curcumin Content, Crystal Violet, Drained Weight, Diastase Value, Density, Dextrin, Dextrose, DDT, Heptachlor, Dry Matter, E-coli, Gas Composition Analysis, Enzymes Activity, Faecal Coli form, Fat Free Cocoa Solid, Free Fatty Acid, Fat, Fatty Acids Composition, Saturated Fat, Unsaturated Fat, Fit for Human Consumption (Wheat/Rice), Flavor, Formalin, Folic Acid, Fructose, Fungi (Allergy Producing), Fungi (Storage), Fungi (Xerophillic), Fusel Oil, Glucoamylase, Glucosamine Sulfate-Na, Gluten Whey Gluten (dry), Glycogen, Granularity, Hardness, Histamine, Humicola Species, Hydrogen Sulphide Producing, Bacteria (Presence), Hydrose, Hydrogen Peroxide, Identification of Animal, Fat/Vegetable Fat, Identification & Characterization of Packing Material

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	(PE/PP/LDPE/HDPE/Aluminum Foil/Laminates etc.), Insoluble Matter in Ether, Insoluble Impurities, Inositol, Iodine, Iodine value, Iron, Listeria Monocytogenes, Lactose, Lecithin, Lead, Lycopene, Maltodextrin, Magnesium, Manganese, Melting Point, Mercury, Melamine, Malachite Green, Milk Solid, Milk Fat, Moisture, Molasses Purity, Monosodium Glutamate, Net Weight, Nicotine, Nitrate, Nitrite, Nickel, Nitrofurantoin, Non-Volatile Ether Extract, Ochratoxin A, Oxytetracycline, Oil/Grease Content of Water, Oleo Resin, Organoleptic Test, Oxidation Test, Optical Rotation, P. Citrinum, Pectin, Protein, Pectinase, pH, Peroxide Value, Peroxides, Potassium, Phosphorous, Pesticide Residue Analysis of Organochlorine and Organophosphate, Potassium, Meta Bisulphite, Protease Activity, Psychrophilic Bacteria c.f.u/g, Polarization, Reducing Sugar, Refractive Index, Residual Chlorine in Water, Rhizopus Species, Salmonella Species (Presence), Saponification Value, SO ₂ , Soap Content, Sodium Chloride, Sodium, Sodium Tripolyphosphate, Sodium Benzoate, Solubility Test, Solubility Index, Specific Gravity, Spore Forming Bacteria c. f. u/g, Standard Plate Count Starch, Staphylococcus aureus, Sterility Test, Streptococci (Total count), Sucrose/Sugar, Sulphur, Sulphate, Sulphated Ash, Taste, Tetracycline, Theobromine, Thermophilic Flat Sour, Thiobacteric Acid, Titre Titratable Acidity, Total Acid, Total Coil Form, Total Lipids, Total Mould Count (Mesophilic), Total Mould Count (Thermophilic), Total Soluble Solid Content (TSS)/TDS, Total Volatile Base, Total Volatile Nitrogen, Triglyceride, Trypsin Inhibitor, Turbidity, Un-Saponifiable Matter, Urea, Venilline Test, Viscosity, Viability Test (Bacterial Fertilizer) Vibrio Cholerae/V., Parahaemolyticus, Vitamin A, Vitamin C, Vitamin D, Vitamin B3, Vitamin E, Vitamin B1, Vitamin B2, Vitamin B5,
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		Vitamin B6, Vitamin B12, Vitamin K, Yeast Activity Test, Water Extract, Water Activity, Water Soluble Ash/Water Insoluble Ash, Yersinia enterocolitica, Radiation test in food, γ -Radiation test in food, Zinc.
6.	Tea	Moisture, Water Extract, Total Ash, Water Insoluble Ash, Cellulose, Particle Size etc.
7.	Chemical Analysis of Cement/Clinker/Fly Ash	SiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , CaO, MgO, Chloride, K ₂ O, Na ₂ O, SO ₃ , Loss of Ignition, Insoluble Residue, Carbon Content, C ₃ S, C ₂ S, C ₃ A, C ₄ AF, P ₂ O ₅ , Total Alkali, Fineness, Free Lime, Insoluble Residue, Moisture etc.
8.	Chemical Composition of Slag	Al ₂ O ₃ SiO ₂ , Fe ₂ O ₃ , CaO, MgO, K ₂ O, Na ₂ O, SO ₃ , Loss of Ignition etc., Anti Slag Agent, Refining Agent
9.	Toxicity, trace elements, VOCs and chemical parameters	Waste water and aqueous medium.
10.	Chemical Analysis of Glass & Ceramics	
	Alum	Al ₂ O ₃ , Fe ₂ O ₃ , Purity, pH, Insoluble Residue etc.
	Different types of Ceramic Raw Materials: Clay / Quartz / Feldspar/ Silica Sand/ Lime Stone/ Dolomite	Al ₂ O ₃ , Fe ₂ O ₃ , SiO ₂ , CaO, MgO etc.
	Different types of Ceramic Finished Products i.e., Porcelain, Earthen Wares and Stone Wares	Al ₂ O ₃ , PbO, CdO, SiO ₂ , CaO, MgO, HgO, Hg ₂ O etc.
	Enamel Raw Materials i.e., Clay/ Quartz/Feldspar/ Silica Sand/Lime Stone	Al ₂ O ₃ , PbO, CdO, SiO ₂ , CaO, MgO, HgO, Hg ₂ O, B ₂ O ₃ etc.
	Enamel Finished Products i.e., Plate/Bowl/Mug	Al ₂ O ₃ , PbO, CdO, SiO ₂ , CaO, MgO, HgO, Hg ₂ O, B ₂ O ₃ etc.
	All types of Minerals	Fe, Zn, Ni, Ca, Mn, Co, Cr, Pt, As, Cd, Ag, Cu etc.
	Dry Horns Lead	Lead Acetate Basic, Lead Oxide, Specific Gravity
	Ceramic Table Wares/Articles	Lead and Cadmium
	Ceramic Glazes	Moisture, Ash, Al ₂ O ₃ SiO ₂ , Fe ₂ O ₃ , TiO ₂ , MgO, K ₂ O, Na ₂ O etc.
	Hydrated Alumina/Calcined Alumina	Percent Purity, Specific Gravity etc.
	Antimonial Lead	Percent Purity, Sb, Fe
	Calcium Additive	Percent Purity, Impurities as Pb, Cd, Mg, Na, Cl ⁻ , Specific Gravity, Water content,

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		Moisture etc.
	Cold Lime	Percent Purity, Impurities as Pb, Cd, Mg, Na, Cl ⁻ , Specific Gravity, Water content, Moisture etc.
	All types of Ceramic Materials/Minerals	Phase Analysis
	Zinc Dust/Zinc Ash	SiO ₂ , Zn, Fe ₂ O ₃ etc.
	Boiler Scale	SiO ₂ , MgO, CaO, SO ₃ , Fe ₂ O ₃ , Insoluble Residue etc.
	Bauxite/Refractory Material/Castable	Al ₂ O ₃ SiO ₂ , Fe ₂ O ₃ , CaO, MgO, K ₂ O, Na ₂ O SO ₃ , Loss of Ignition etc.
	Refined Sulphur	Percent Purity, Particle Size, Te, Se, Pb, Bitumen, Ash Content, Specific Gravity etc.
	Ceramic Material	Thermal Analysis
	Lithophone	Zn, Ca, SiO ₂ , Moisture etc.
	Marble Chips	Chemical Composition
11.	Chemical Test of Salts/Reagents	
	Soda Ash	% of Na ₂ CO ₃ , % of NaCl, pH, Fe, Insoluble Reside etc.
	Caustic Soda	% of Na ₂ CO ₃ , % of Na ₂ SO ₄ , % of NaCl, % of NaOH, Insoluble Reside etc.
	Bleaching Powder	Free Chloride, Total Chloride, Purity etc.
	H ₂ O ₂	Purity, Density, Specific Gravity etc.
	NaCl	Composition and Purity
	Chemical Composition	Sodium Sulphate/Alum Sulphate/ Potassium Silicate/Magnesium Sulphate /Chromium Oxide/Zinc Sulphate/ Ammoium Sulphate/Sodium Chromate/ ZnCl ₂ / Pre-metal Chemicals/ Additive Materials/ Polyurethane /Aluminum Foil/ Optical Whitening Agent/ Chemical Finishing Agent/ Urea Formaldehyde/ Antimicrobial Activity etc.
12.	Chemical test of Sea Salts	Density, Viscosity, pH, Conductivity, % of NaCl, Ca, SO ₄ ²⁻ , Cl ⁻ , Fe, Chemical Composition
13.	Chemical test of Paper	Moisture Content, Viscosity, pH, Conductivity, Chemical Composition, GSM,
14.	Chemical test of chemical accessories used in Leather	Chromium Sulphate, Chromium Oxide, Oil & Fat, pH, Sulphide, Waste Water Analysis etc., Basicity, Color, Calcium Oxide, Chromic Oxide Content, COD Value,

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		Chloride/Sulphate /Nitrate/Ammonia, Chromic Oxide Content, Iodine Value/Acid Value, Moisture Content, Nitrogen & Hide Substance, pH, SS/DS/TDS, Total Sulphide, Tannin Content,
15.	Chemical test of Dye	Solubility, Color, pH, Azo Compounds Identification, Binder, Chemical Name, Toxic Azo dyes Enacted by European Union (EU), Varnish, Paint etc.
	Inorganic Pigment	Percent Purity, SiO ₂ , Impurities, Particle Size, Moisture, Solubility in Water, Density, Alkali Resistant, Loss on Ignition, Oil Absorption Value etc.
16.	Chemical test of Pesticides	% Composition
17.	Chemical test of Coal/Fuels/ Bitumen/ Petrol/Diesel/Biodiesel/Grease /Kerosene Tar /Coal/Coke/ Charcoal/ Wood/Leaves /Agri-Residues/ Jute Products/Saw Dust/Rice Husk/Solid Wastes/ Parafilm/ Wax / Gaseous Fuel/ Textile Lubricant	Fixed Carbon, Sulfur Content, Calorific Value, Boiling Point, Colour, Melting Point, Elemental Composition, Insoluble Matter, Viscosity, Density, Sp. Gravity, Surface Tension, Sound Velocity, Annealing Point, Ash, Carbon Residue, CO ₂ , Combustion, H ₂ S, Octane Number, Cetane Number, Emulsion Test, Doctor Test, Gas Analysis, Cloud Point, Hydro-carbon (C1-C4), Pour Point, Sap Value, Fire Point, Oxidation Test, Flash Point, Hydro Distillation, Unsaponified Matter, Freezing Point, Hydrocarbon, Iodine Value, Acid Value, Moisture content, Particle Size, Penetration Test, Nitrate, BOD, COD, Smoke point, Ester Value, DO, Flora/Fona/Fungi, Volatile Matter, Vitamins, pH, Organic Matter, Trace metals, Mineral Matter, Viscosity Index, Volatile Matter, Refractive index, Corrsion, TGA Analysis, API Gravity etc.
18.	Chemical test of Cosmetics/Herbals	Moisture, Free Alkali, Inorganic Salts, Volatile Matter, Caustic Alkali, Total Alkali, Glycolic Acid, Arsenic, Boric Acid, Peroxide Value, Stability, Fatty Acid, Acid Value, Chloride, Lead, Fineness, Insoluble Matter, Solubility, Viscosity, Formaldehyde, Foaming Value, Density, Sap Value, Ethanol Content, Sodium Chloride, Acid Content, CMC etc.
19.	Chemical test of different types of organic and inorganic acids and bases: H ₂ SO ₄ , H ₃ PO ₄ , HCl, Citric Acid,	Purity test, Sp. Gravity, Density, Viscosity Composition, etc.

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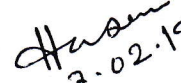
Pre-define Tests of Department of Chemistry

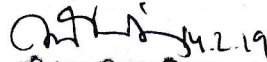
HNO ₃ , CH ₃ COOH, Ascorbic Acid, Tartaric Acid, KOH, NaOH, Ca(OH) ₂ , Mg(OH) ₂ etc.	
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CHAIRMAN
CENTRAL ORTS
Khulna University of Engineering & Technology