

Comparison table for HKORC Compost and Soil Conditioner Quality Standards (2005) and Recommended New HKORC Standard for Compost and Soil Conditioner (the modifications were highlighted in red)

	HKORC Compost and Soil Conditioner Quality Standards (2005)		Recommended New HKORC Compost and Soil Conditioner Quality Standards	
Compost Maturity	Seed Germination Index: $\geq 80\%$		Seed Germination Index: $\geq 80\%^*$	
	Group A	Group B	Group A*	Group B*
	Ammonia conc. ≤ 700 mg/kg dw	C/N ratio ≤ 25	Ammonia conc. ≤ 500 mg/kg dw	C/N ratio ≤ 20
	Ammonia: nitrate ratio ≤ 3	Oxygen demand ≤ 0.4 g O ₂ /kg TS/hr	Ammonia: nitrate ratio: no need to test	Oxygen demand ≤ 0.4 g O ₂ /kg TS/hr
	Volatile organic acids conc. ≤ 500 ppm dw	Carbon dioxide evolution ≤ 2 g C/kg VS/day	Volatile organic acids conc.: no need to test	Carbon dioxide evolution ≤ 2 g C/kg VS/day
Compost Quality	Foreign matter: Stone larger than 5 mm: $\leq 5\%$ dw, Man-made foreign matters include glass, plastic and metal larger than 2 mm $\leq 0.5\%$ dw			
	Heavy metal (Unit : mg/kg dw)			
		<u>Organic farming</u>	<u>General agricultural use</u>	<u>Non-agricultural use</u>
	Arsenic	≤ 10	≤ 13	≤ 41
	Cadmium	≤ 1.5	≤ 3	≤ 39
	Chromium	≤ 100	≤ 210	$\leq 1,200$
	Copper	≤ 300	≤ 700	$\leq 1,500$
	Mercury	≤ 1	≤ 1	≤ 17
Nickel	≤ 50	≤ 62	≤ 420	
Lead	≤ 100	≤ 150	≤ 300	

	Selenium	≤ 2	≤ 5	≤ 36
	Zinc	≤ 600	≤ 1,300	≤ 2,800
Physicochemical properties				
	pH: 5.5 – 8.5		pH: 5.5 – 8.5	
	Organic matter > 20% dw		Organic matter > 20% dw	
	Moisture 25 – 35%		Moisture 25 – 45%	
Pathogen: <i>Salmonella sp.</i> ≤ 3 MPN/4 g , <i>Escherichia coli (E. coli)</i> ≤ 1,000 MPN/g				
Nutrient contents: total nitrogen + total phosphorus + total potassium ≥ 4% dw				

* If the SGI is < 80%, EC, Group A (Ammonia conc.) and Group B (C/N ratio, and/or Oxygen demand and Carbon dioxide evolution) should be tested to further evaluate the compost maturity and stability according to the flowchart for determination of compost. If the SGI is ≥ 80%, then the compost is mature and stable, no other chemical characterization **testing of Group A, Group B and EC** is needed.

Compost and Soil Conditioner Quality Standard Remarks

Seed Germination Index

Seed Germination Index using distilled water mixed with fresh compost product in ratio 5:1 (calculated in wet weight), distilled water was added and the mixture was shaken for 30 minutes. 10 ml of the filtered mixture would be extracted and added to filter paper in a sterilized Petri dish, after that 10 cress seeds (~~lettuce seeds are also accepted~~) are evenly distributed on the filter paper. The set up would be inoculated in dark condition in 25°C for 48 hours. Control sample is made using distilled water instead of the mixture extract. After counting the number of seeds germinated and measuring the length of roots, Seed Germination Index was calculated as follow:

$$\text{Seed Germination Index(\%)} = \frac{\text{Germination rate in product mixture} \times \text{root length}}{\text{Germination rate in control sample} \times \text{root length}} \times 100\%$$

Compost Quality			
Foreign Matter			
Stones larger than 5mm	TMECC 03.08-A		
Man-made Foreign Matters include glass, plastic and metal larger than 2mm			
Heavy Metal (For Organic Farm, Conventional Farm and Non-Agricultural Use)			
Arsenic	TMECC 04.06-AS	Nickel	TMECC 04.06-NI
Cadmium	TMECC 04.06-CD	Lead	TMECC 04.06-PB
Chromium	TMECC 04.06-CR	Selenium	TMECC 04.06-SE
Copper	TMECC 04.06-CU	Zinc	TMECC 04.06-ZN
Mercury	TMECC 04.06-HG		
Physicochemical Properties			
pH	TMECC 04.11	Moisture content	TMECC 03.09-A
Organic matter	TMECC 05.07-A		
Pathogen			
Salmonella sp.	TMECC 07.02-A1-2	E. Coli	TMECC 07.01-B
Nutrient content			
Total N (Count as N)	TMECC 04.02-A	Total K (Count as K ₂ O)	TMECC 04.04-A
Total P (Count as P ₂ O ₅)	TMECC 04.03-A		

The above test method codes are based on Test Methods for the Examination of Composting and Compost (TMECC) (Eds. W.H. Thompson (Chief Ed.), P.B. Leege, P.D. Millner & M.E. Watson, 2002. The USDA and US Composting Council, USA.), please refer to the book for test method in details.