Parameter	Example Testing Methods	Unit	Universal feed spec for 5% co-pro in existing DHT	Concern/rationale
Composition and percentages in blend		wt or vol%	Feedstock manufacturer / supplier to report	Predicting alkane chain length and product cloud point Basis for assessment of contamination
Prohibited components in blend			Shall not contain recycle oils, waste oils, mineral oils or fish oils	Contaminant control
Appearance @50°C	Visual ASTM D4176	ASTM D4176	Liquid product free from solids	Transport contamination with solids
Appearance (Colour) @ 50°C	Visual ASTM D4176			Provides indication of purity and degree of deterioration over time Can be indicator of preheat system fouling potential from feedstock degradation
Colour @ 50°C	AOCS 13a-43 AOCS 13b-45 AOCS Cc 13j-97 AOCS CA 16-75 R		Report	Provides indication of purity and degree of deterioration over time Can be indicator of preheat system fouling potential from feedstock degradation
Density @ 50°C	ASTM D4052 ISO 12185 ISO 6883	kg/m3	Report	Reconcile reported composition and percentages in blend
Flash Point	ASTM D93 ISO 2719 AOCS Cc 9b-45	°C	> 120	Contamination by volatile solvents / compounds Safety during transport and storage
Slip Melting Point	ASTM D87 ISO 6321 AOCS Cc 3b-92	°C	< 50	Maintain pumpability in feed handling and injection Avoid high temperature degradation
Cloud point of HVO		°C		
Moisture and Volatile (M)	ISO 662 AOCS Ca 2b-38	wt%	< 0.2	Ionic salt fouling of preheat system and reactor Aqueous phase corrosion cracking of stainless steel Aqueous phase enabling of acidic attack 2000 ppm
Insoluble Impurities (I)	ISO 663 EN 12662 AOCS 3a-46	wt%	< 0.10	Feed filtration and solids handling Solids deposition and fouling
Unsaponifiable (U)	ISO 18609 ISO 3596 AOCS Ca 6a-40	wt%		Organic materials other than fats Unwanted reactions and products
MIU	Calculated from other tests	wt%	< 1.0	
Free Fatty Acids (as Palmitic)	ISO 660 EN 14078 AOCS Ca 5a-40	wt%	< 3.0	Corrosion in feed storage, handling and injection Can be higher if feedstock handling facilities are exotic (5%)
Total acid number	ASTM D664	mg/g		TAN can be used as an alternative to FFA
Peroxide Value	ASTM D3703 AOCS Cd 8b-90	meq/kg	<10	Preheat system fouling from air degradation of feed
Oxidation Stability (Rancimat)	EN 15751	hr		Preheat system fouling from air degradation of feed
Iodine number	ASTM D1959 EN 14111 AOCS Cd 1d-92	g/100g		Hydrogen consumption and heat release
Bromine number	ASTM D 1159	g/100g		Hydrogen consumption and heat release
Phosphorous and Calcium combined (P + Ca)	ASTM D7111 EN 14107 (P) EN 14538 (Ca)	mg/kg	< 4	Catalyst pore mouth plugging and bed fouling Standalone can use proprietary catalyst for HDO only
Phosphorous (P)	ASTM D5185 ASTM D7111 ISO 10540-3 ISO 10540-1	mg/kg		Catalyst pore mouth plugging and bed fouling Standalone can use proprietary catalyst for HDO only
Sodium (Na)	ASTM D7111 EN 14538	mg/kg		Attacks the catalyst support material causing loss of stregth Top bed plugging by ionic salts
Calcium (Ca)	ASTM D7111 EN 14538	mg/kg		
Total Contaminants (Al+As+Ca+Cr+Cu+Fe+Mg+Na+Ni+P+Pb+Si+V+Zn)	ASTM D7111	mg/kg	< 10	Catalyst Deactivation and cycle life Balance between trap materials and active catalyst
Chloride (Cl)	Chlora ASTM D7536 UOP 588	mg/kg	< 5	Contamination by sodium chloride Aqueous phase corrosion cracking of stainless steel Solids deposition and fouling
Sulphur (S)	ASTM D 4294 ASTM D5454	mg/kg		
Nitrogen (N)	ASTM D4629	mg/kg		
Plastic content	ISO 6656 AOCS Ca 16-75	mg/kg	< 50	Contaminant control