



Airlines for America[®]

We Connect the World

Commercial Aviation Fuel Quality Challenges

DLA Worldwide Energy Conference

April 2026

About Airlines for America

Airlines for America (A4A) advocates on behalf of its members to shape crucial policies and measures that promote safety, security and a healthy U.S. airline industry. We work collaboratively with airlines, labor, Congress, the Administration and other groups to improve aviation for the traveling and shipping public.



MEMBER AIRLINES

Alaska

American Airlines



ATLAS AIR
WORLDWIDE



DELTA



AIR LINES

FedEx
Express



Southwest



jetBlue

UNITED



AIR CANADA



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A4A Fuel Groups



ENERGY COUNCIL

- Works to reduce fuel and handling costs
- Minimize operational, financial, environmental risks
- Sets policy on economics of fuel management and operations
- Addresses criticality of critical fuel infrastructure
- Respond to emergency supply disruptions



FUEL TECHNICAL COMMITTEE

- Develops fuel handling policies
- Advises on fuel quality matters and investigations (on airport and upstream)
- Monitors and shapes industry standards and regulations
- Coordinating industry position on common fuel system issues
- Strive for unanimous consensus



FUEL OPERATIONS COMMITTEE

- Develop airport fuel system operational policies
- Develops airport fuel system maintenance policies

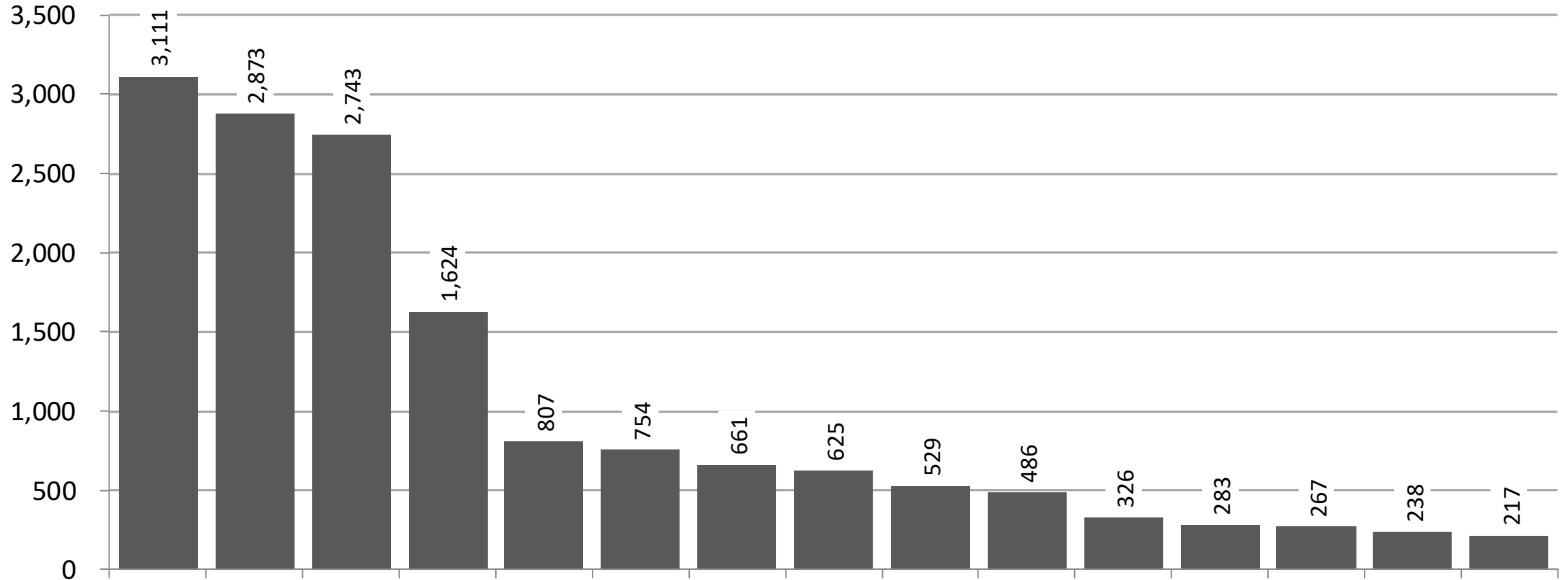


SUSTAINABLE AVIATION FUEL COMMITTEE

- Formulate operational strategy, policy and actions to convert from CJF to SAF
- Advocate for policies and actions that will spur production of SAF
- Supporting policies and incentives that will reduce the cost gap between SAF and CJF
- Monitoring mechanisms that enable the appropriately balanced distribution of SAF

U.S. Jet Fuel Usage by Air Carrier Operating Certificate

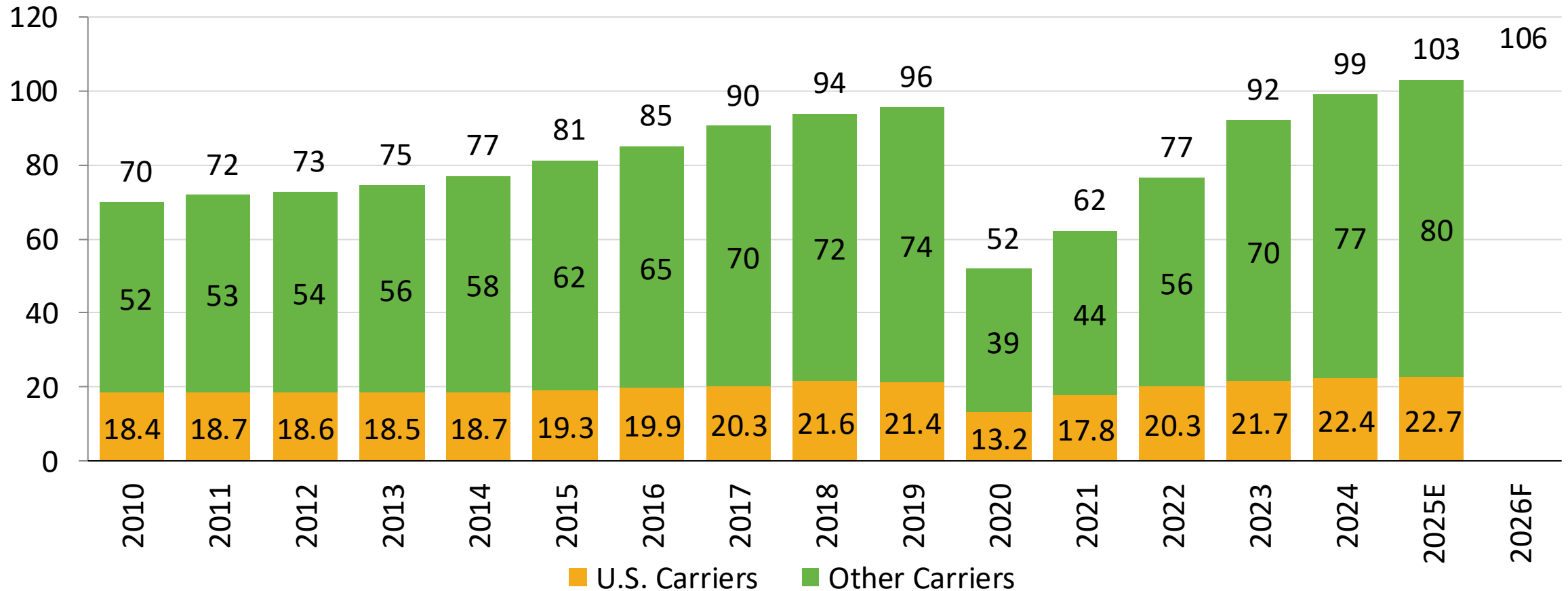
Millions of gallons



Source: U.S. Bureau of Transportation Statistics Form 41 Schedule T-2 Account 921

Global Airline Jet Fuel Consumption

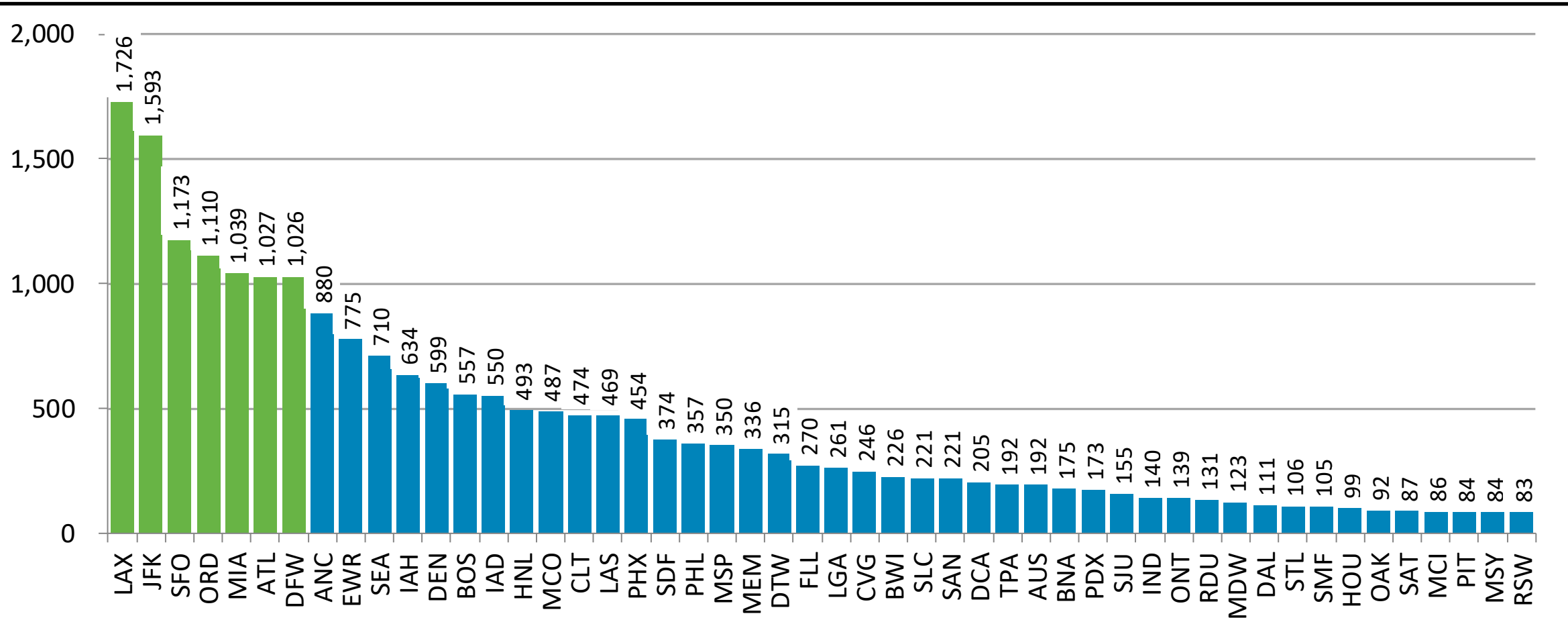
U.S. Carriers ~25% of global consumption (billions of gallons)



Source: IATA and U.S. Bureau of Transportation Statistics Form 41 Schedule T-2 Account 921

Top 50 U.S. Airports by Jet Fuel Usage, 2025

Seven airports saw more than 1 billion gallons





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Quality Challenges – On Airport

2025 Fuel Quality Challenges

A challenging but colorful year



Filtration Into-Wing

Monitoring a major transition in fueling equipment technology

- » Conversion from polymer-based filter monitor technology to:
 - Filter water separators
 - Water barrier filters
 - Dirt defense filters with electronic water sensors



Microbial Contamination

Representative Photos



Microbial Test Kits

CRC Aviation Committee Project AV-31-22

Evaluation of the test kits:

- The statistical analysis of all data showed a strong agreement between test kit 4 and the IP 385 method and a moderate agreement between test kit 1 and test kit 2 with IP 385.
- In addition, a near-perfect agreement was observed between test kit 1 and test kit 2, and a strong agreement between test kit 3 with kit 1 and test kit 2.
- A moderate agreement was observed between test kit 4 and test kit 2.
- Regarding the repeatability of each test kit the most repeatable test in all the assays performed was test 1 (100% of repeatability) while test 3 was the least repeatable test.

Bonding Cables

Bonding fueling equipment to aircraft

- » Highest frequency audit checklist item
- » Ongoing Root Cause Investigation

Bonding Reel Inspections					
Equipment	Total Count	Finding Rate (%)	Equipment	Total Count	Finding Rate (%)
Hydrant Truck - Sat	185,735	99.6387	Bowser - Sat	1,577	99.873
Comment	671	0.36126	Comment	2	0.12682
OOS	8	0.0043	OOS	0	0
Reel Won't Lock	35	0.18844	Reel Won't Lock	0	0
Cable Casing Cracked	114	0.061377	Cable Casing Cracked	1	0.06341
Clamp Broken	236	0.12706	Clamp Broken	0	0
Other	378	0.20351	Other	1	0.06341
Hydrant Cart - Sat	758,664	99.725	Self Serve - Sat	11,374	99.998
Comment	2,083	0.27456	Comment	2	0.001758
OOS	16	0.0021	OOS	0	0
Reel Won't Lock	26	0.00342	Reel Won't Lock	0	0
Cable Casing Cracked	480	0.06326	Cable Casing Cracked	0	0
Cable Tangled	235	0.03097	Clamp Broken	0	0
Clamp Broken	893	0.1177	Other	2	0.001758
Other	816	0.10755			
Tanker Truck - Sat	457,573	99.697			
	1,383				



Hydrant System Flushing

teamflush@distro.airlines.org

- » Setup to Review Flushing Plans
 - Initial commissioning
 - Construction and repairs
- » Better coordination
 - Access to airline fuel quality reps
 - Timely proposal of flushing plan
 - Consensus among airlines



ATA103 Revision 202x.1

- » Revision underway
- » Anticipated Q4 2026
- » Flushing/Commissioning changes
- » Calibration
- » Appearance
- » Sump separators
- » Testing procedures





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Quality Challenges – In Supply Chain

Aircraft v Pipeline Jet Fuel Specifications

Selection of Examples

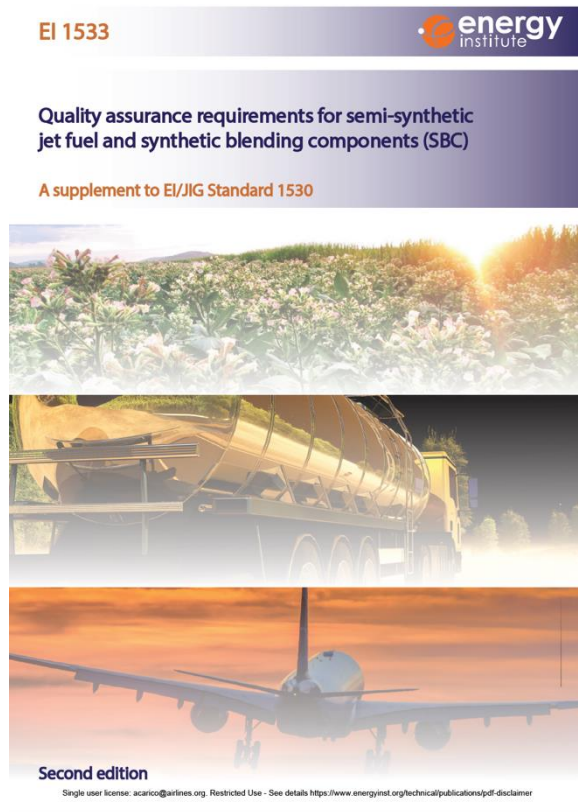
	ASTM D1655	Colonial Pipeline	Tesoro Logistics Northwest Pipeline	Explorer Pipeline	Kinder Morgan Pacific Operations
<i>Grade</i>	Jet A	54	JET	51	15
<i>Version</i>	-2025a	07/25/2024	01/01/2024	09/01/2025	04/01/2025
Sulfur, max	0.30 %	0.30 %	0.30 %	0.15 %	0.30 %
Thermal Stability Test Temp	260 °C	275 °C Origin 260 °C Delivery	275 °C	275 °C Origin 260 °C Delivery	275 °C Origin 260 °C Delivery
MSEP, min	85	85 Origin 75 Delivery	85	85 Origin 75 Delivery	85
Flash Point, min	100 °F 38 °C	105 °F 40.5 °C	108 °F 42.2 °C	108 °F 42.2 °C	108 °F 42.2 °C

CRC Aviation Committee Project

Generate analytical data on incidental material contamination in jet fuel

Material of Concern	Potential Source/Use	Test Method	Limit in D1655
Fatty Acid Methyl Esters (FAME)	Supply contamination with biodiesel	ASTM D7797 and IP 585	50 mg/kg max
Drag Reducing Agents (DRA)	Pipeline additive used in diesel/gasoline	ASTM D7872	72 ug/L max
Metal Deactivator Additive (MDA)	Jet additive used to fix thermal stability failure	ASTM D8545	5.7 mg/L max
Nitrogen	Naturally occurring in crude or additive trail back	ASTM D4629	No limit
Conductivity	Naturally occurring	ASTM D2624	No limit

SBC Quality Concerns



- » Moving hydrocarbons isn't new but SBC producers may be new to moving hydrocarbons
- » New supply routes lead to growing pains and learning curves
- » You don't know what you don't know
- » Blending may obscure marginal products
- » EI 1533 getting frequent and FREE updates



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Flash Point

ASTM Task Force to Adjust D1655/D7566 Limits

Current requirements

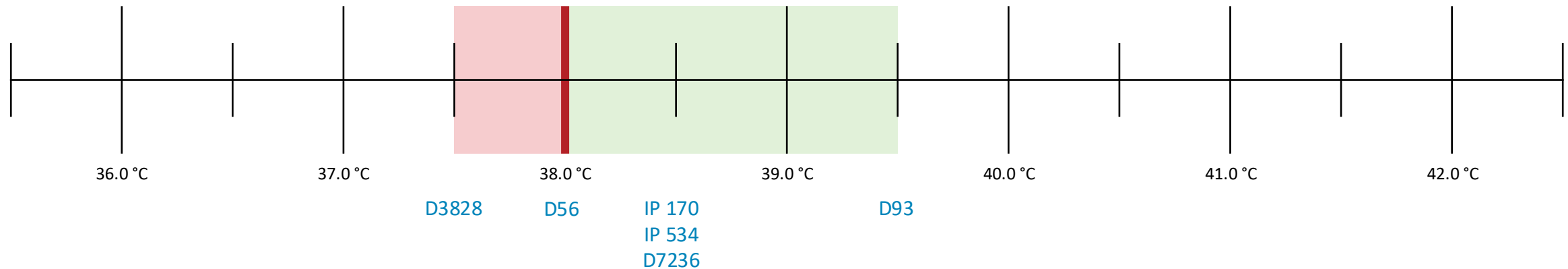
D1655-25

TABLE 1 Detailed Requirements of Aviation Turbine Fuels^A

Property	Jet A or Jet A-1	Test Methods ^B	
		Referee	Alternative
Flash point, °C	min 38 ^J	D56	D93, ^K D3828, ^K D7236, ^K IP 170, ^K IP 523, ^K or IP 534 ^K

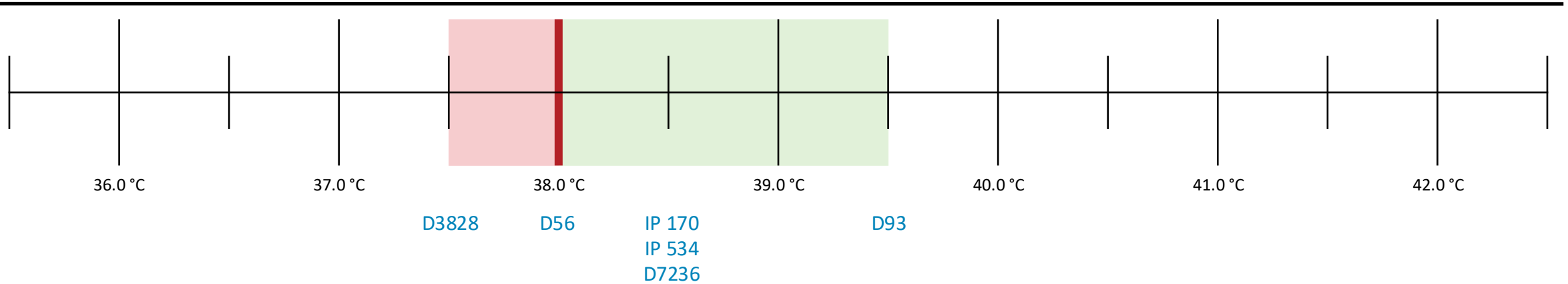
^J A higher minimum flash point specification can be agreed upon between purchaser and supplier.

^K Relative to D56, results obtained by Test Method: D93 can be up to 1.5 °C higher; IP 170, IP 534, and D7236 can be up to 0.5 °C higher; D3828 (IP 523) can be up to 0.5 °C lower (a research report has been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR:D02-2020).



“No allowance shall be made for the precision”

ASTM D1655 para 7.2

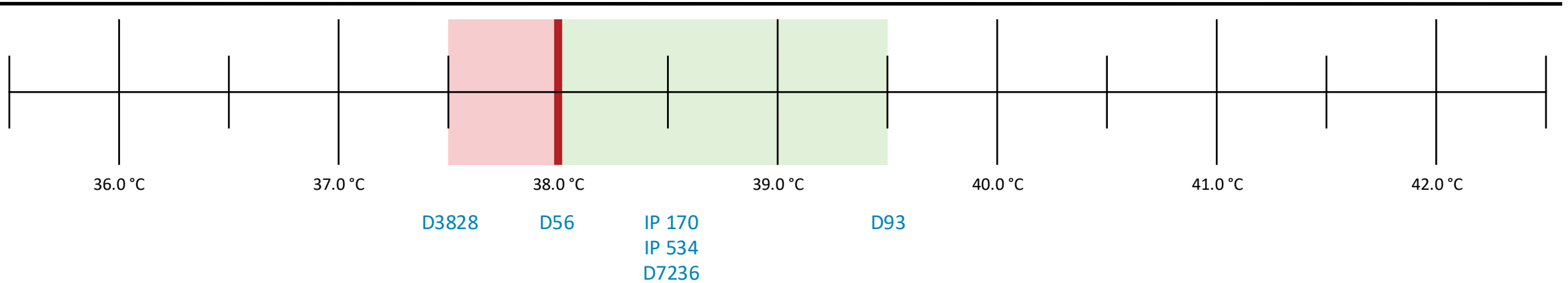


Extract from Annex A, RR: D02-2020

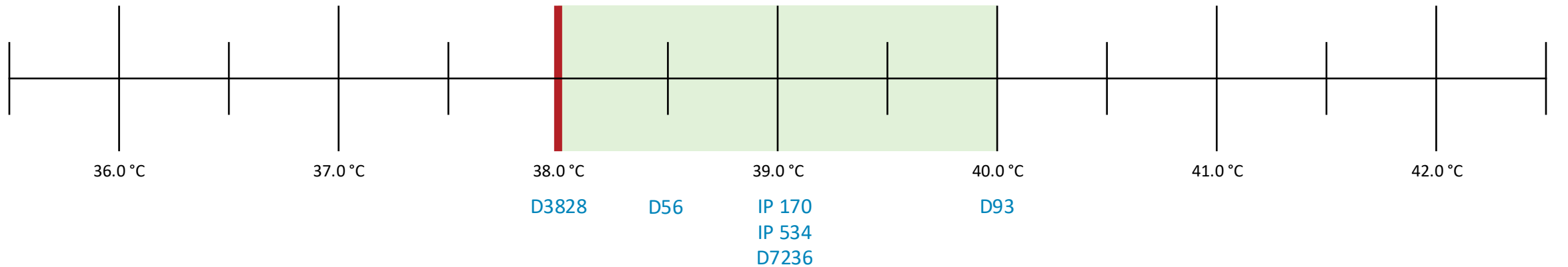
Method	Repeatability r °C	Reproducibility R °C
D56	1.2 (new = 1.2)	4.3 (new = 3.1)
IP 170	1.4	3.2
IP 523, ASTM D3828	2.2	3.8
IP 34, D93	1.1	2.7
IP 534, D7236	1.0	1.9

“No allowance shall be made for the precision”

ASTM D1655 para 7.2

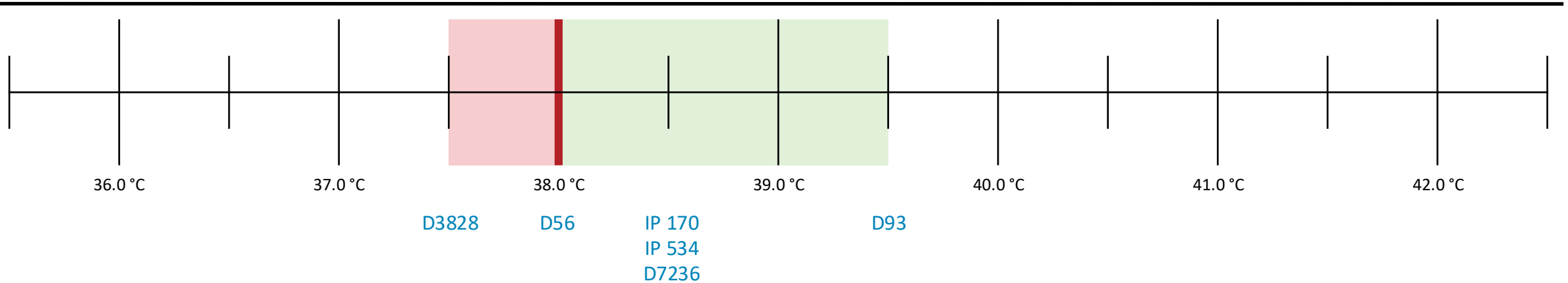


What if a producer/blender/trader only has D3828?

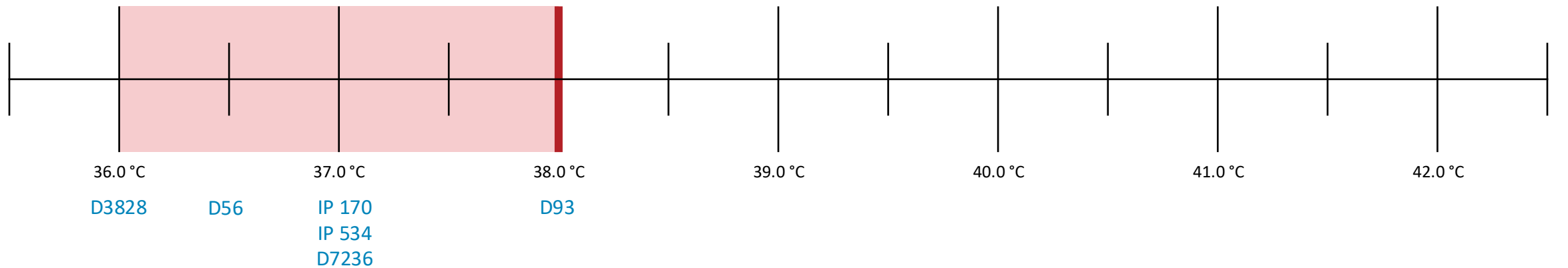


“No allowance shall be made for the precision”

ASTM D1655 para 7.2

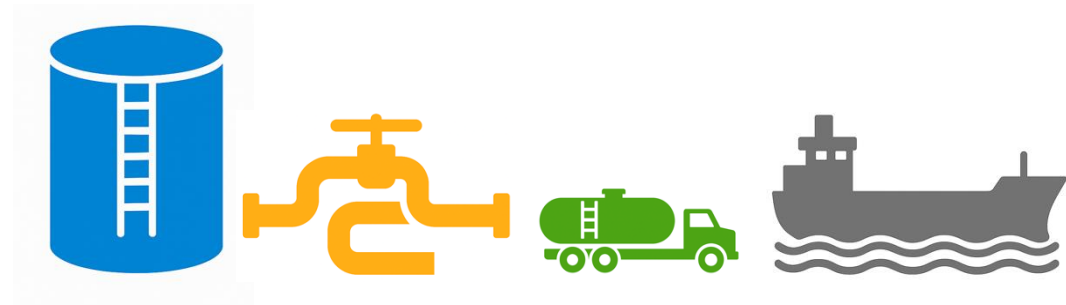


What if a producer/blender/trader only has D3828? What if a producer/blender/trader only has D93?



In the real world

- » A dispute between a purchaser and a seller rarely happen at the point of production
- » Disputes happen most often after the product has physically changed custody at least once and likely multiple times

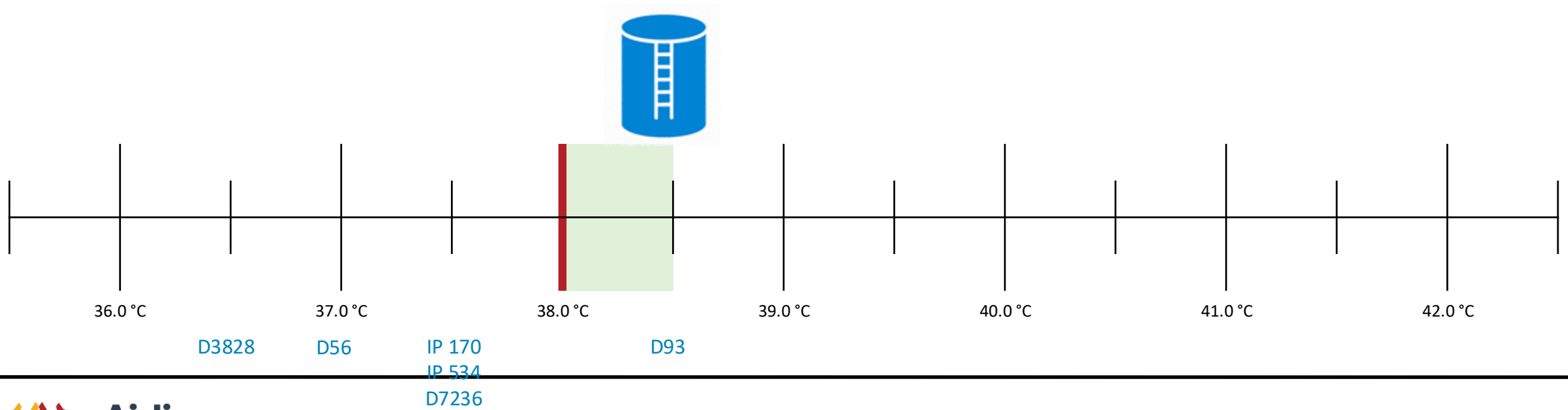


1. Scope*

1.1 This specification covers the use of purchasing agencies in formulating specifications for purchases of aviation turbine fuel under contract.

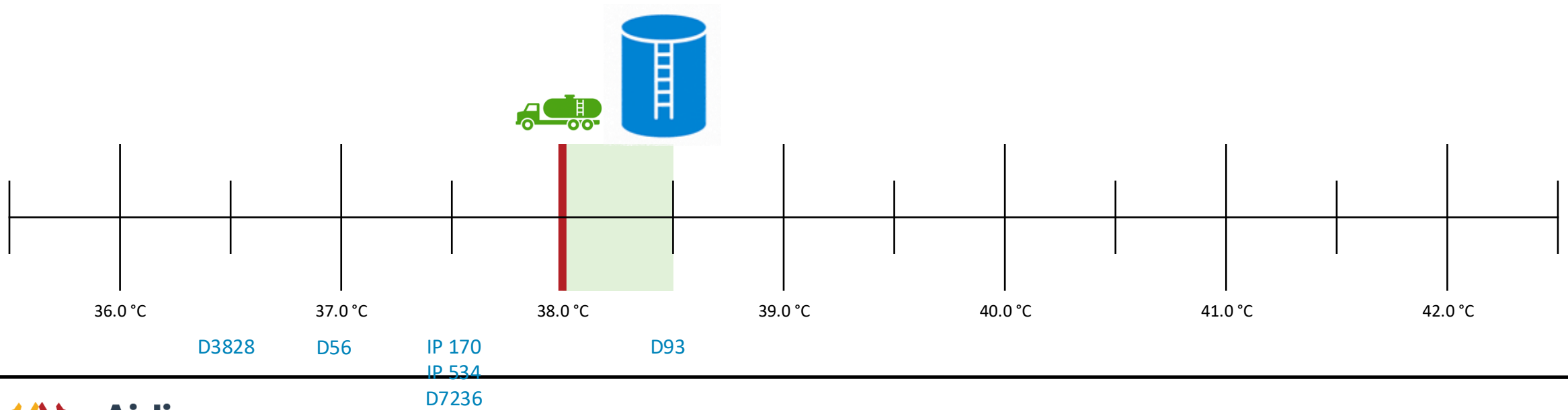
In the real world

» Producer tests with D93, RCQ lists flash point passing at 38.5 °C



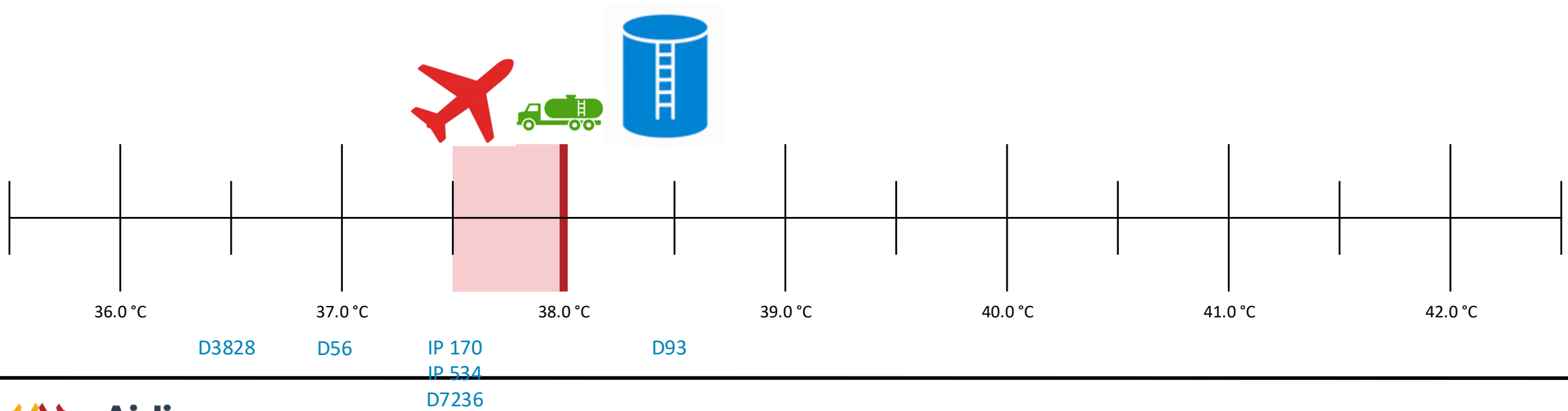
In the real world

- » Producer tests with D93, RCQ lists flash point passing at 38.5 °C
- » Truck loads at refinery, drives away with BOL stating flash is 38.5 °C



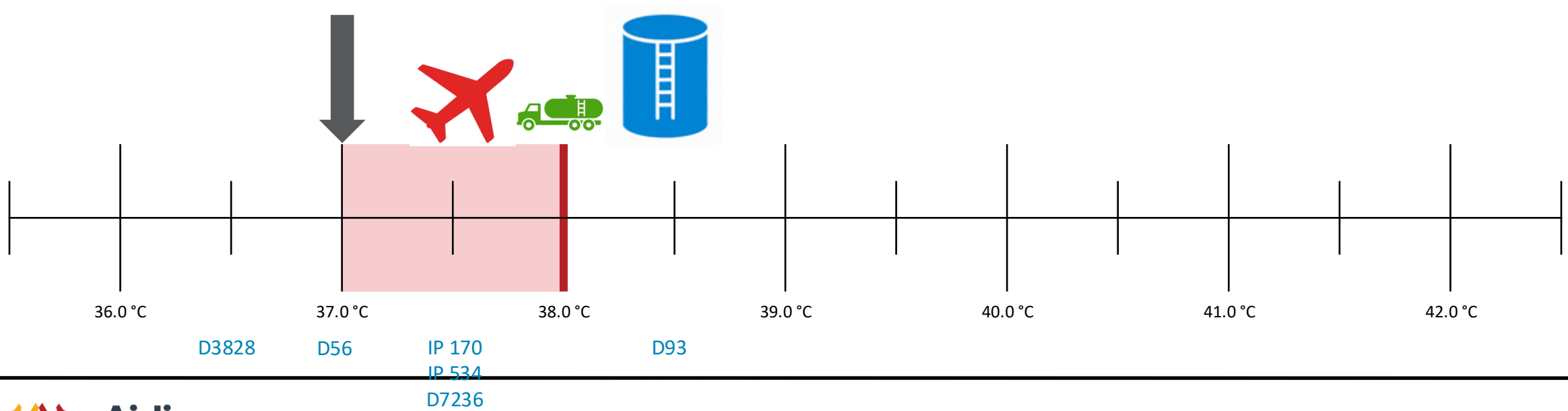
In the real world

- » Producer tests with D93, RCQ lists flash point passing at 38.5 °C
- » Truck loads at refinery, drives away with BOL stating flash is 38.5 °C
- » Airport tests with IP 170: says fuel fails at 37.5 °C



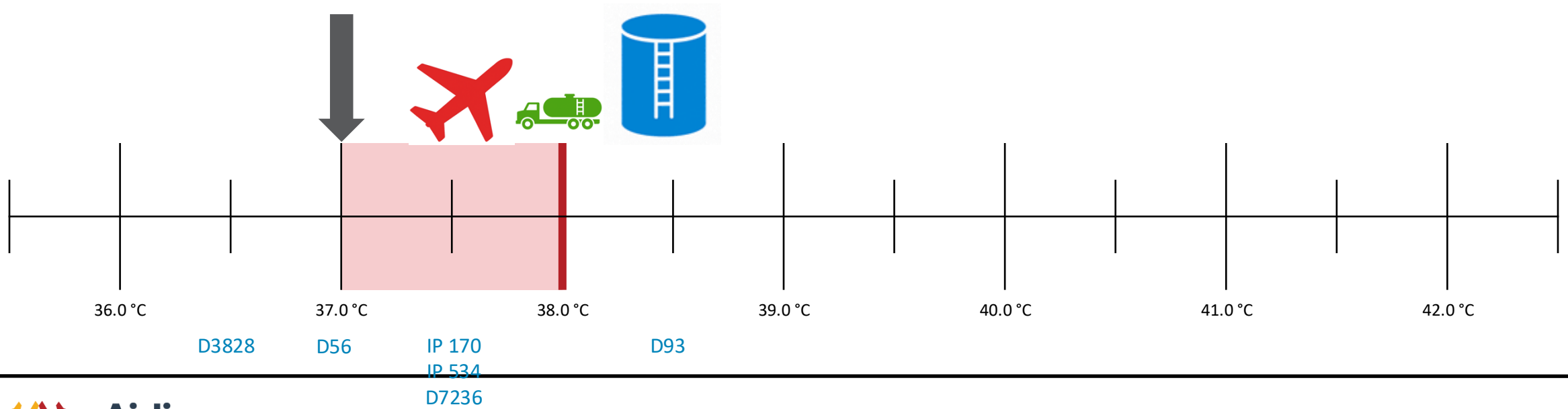
In the real world

- » Producer tests with D93, RCQ lists flash point passing at 38.5 °C
- » Truck loads at refinery, drives away with BOL stating flash is 38.5 °C
- » Airport tests with IP 170: says fuel fails at 37.5 °C
- » Dispute so another lab runs D56 and says fuel fails at 37 °C



In the real world

- » Is it the source tank?
- » Is it the truck?
- » Is it the lab?

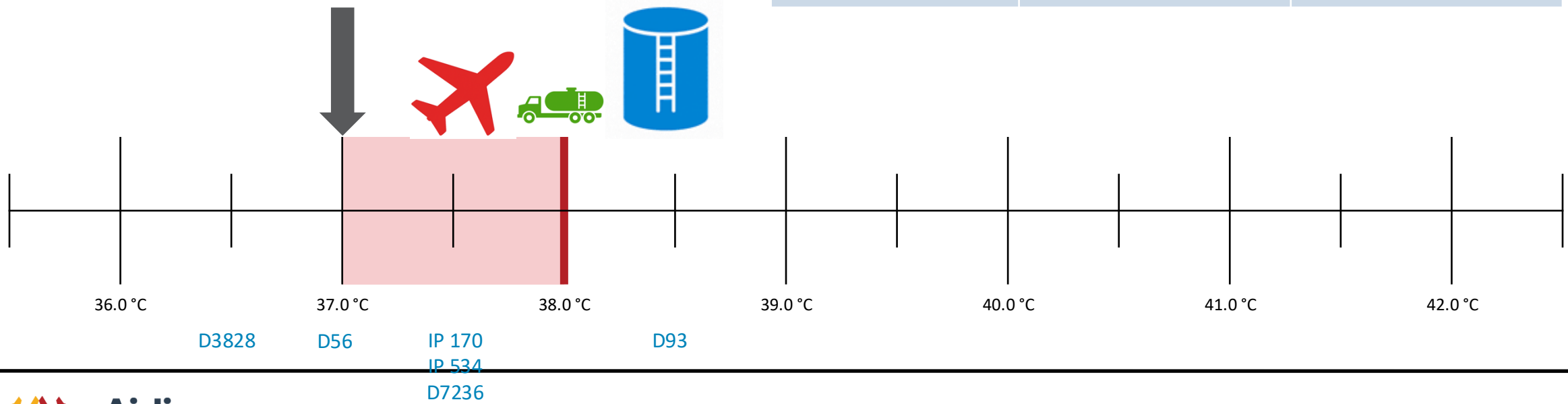


In the real world

- » Is it the source tank?
- » Is it the truck?
- » Is it the lab?
- » Is it the method?

Extract from Annex A, RR: D02-2020

Method	Repeatability r °C	Reproducibility R °C
D56	1.2 (new = 1.2)	4.3 (new = 3.1)
IP 170	1.4	3.2
IP 523, ASTM D3828	2.2	3.8
IP 34, D93	1.1	2.7
IP 534, D7236	1.0	1.9



Proposed D1655/D7566 Table 1 Revision

Similar to aromatics or MSEP

Property			Test Methods	
			Referee	Alternative
One of the following requirements shall be met:				
Flash Point, °C	min	38	D56	
Flash Point, °C	min	38.5		IP 170, IP 534, and D7236
Flash Point, °C	min	39.5		D93, and D7094
Flash Point, °C	min	38.0		D3828/IP 523



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2026 Outlook

2026 Priorities

A4A Fuel Technical Committee

PRODUCTION

- ASTM flash point changes
- 30% Coprocessing approval
- API world jet fuel survey report

DISTRIBUTION

- Pipeline specifications
- Addressing EASA Synthetic Blending Component (SAF) concerns

TERMINAL

- Screening for incidental materials

AIRPORT STORAGE

- Microbial investigation

FUELING AIRCRAFT

- Filter manufacturing oversight
- Aircraft fuel deposit investigation

Standards Update Activity

ICAO 9977

EI 1530 / 1533

ATA103



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