

## Machine Id VOLVO L70H 623623 Component Diesel Engine Fluid CHEVRON 15W40 (5 GAL)

Sample Number       Client Info       ML0000129       VCP408906       VCP365946         Sample Date       Client Info       25 Jan 2024       29 Jun 2023       20 Nov 2022         Machine Age       hrs       Client Info       3970       3476       2785         Oil Age       hrs       Client Info       494       0       0       0         Filter Age       hrs       Client Info       494       0       0       0         Oil Changed       Client Info       494       0       0       0       0       0         Filter Age       hrs       Client Info       494       0 </th <th>RECOMMENDATION</th> <th>Test</th> <th>UOM</th> <th>Method</th> <th>Limit/Abn</th> <th>Current</th> <th>History1</th> <th>History2</th>	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2	
Resample at the next service interval to monitor.         Sample Date Machine Age         Client Info         23 anz 202 (10 angle)         20 an 202 (10 angle)         20 an 202 (10 angle)         20 angle)			0.0111				,		
Machine Age OI Age Hrs         Client Info         970         9476         2755           OI Age Filter Age         Hrs         Client Info         494         0         0           OI Changed         Client Info         494         0         0           OI Changed         Client Info         Changed									
Oi Age         hrs         Client Into         94         0         0           Filter Age         Client Into         494         0         0           Oi Changed         Client Into         Changed         Chang			hrs						
Filter Age         Ne         Client Info         V         P44         0         0         0           OI Changed         Client Info         Client Info         Changed		Ū					0		
OI Changed Filter Changed Simple Status         Client Info         Changed Changed Simple Status         Changed Changed NORMA         Changed NORMA         NORMA           WEAR         ron         pm         ASIM DS165         -200         13         12         -           All component wear rates are normal.         ron         pm         ASIM DS165         -200         13         12         -           Normal         ppm         ASIM DS165         -20         1         -         -         -           Normal         ppm         ASIM DS165         -20         1         -         -         -           Normal         ppm         ASIM DS165         -20         0         0         -         -         -           Aurinum         ppm         ASIM DS165         -20         0         0         -         -           Qopper         ppm         ASIM DS165         -20         1         -         -         -           Winde Metal         scalar         "Visual         NONE         NONE         NONE         NONE         NONE           Tim pp         pdfstb01565         -20         10         6.5         -5         -1         -1         -1		-	hrs	Client Info		494	0	0	
Filter Changed Sample Status         Clean (no         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         NORMAL         NORMAL           All component wear rates are normal.         Iron         pm         ASIN 0586n         50         1         -1         2           Nickel         ppm         ASIN 0586n         50         1         -1         0           Silver         ppm         ASIN 0586n         -30         1         -1         -1           Silver         ppm         ASIN 0586n         -30         1         -1         -1           Lead         ppm         ASIN 0586n         -30         1         -1         -1         -1           Vanadium         ppm         ASIN 0586n         -30         -1 <th></th> <th>-</th> <th></th> <th></th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>		-				Changed	Changed	Changed	
WEAR         Iron         ppm         ASTM D5185m         >200         13         12         15           All component wear rates are normal.         Ohromium         ppm         ASTM D5185m         >20         1         <1         2           Nickel         ppm         ASTM D5185m         >20         1         <1         2           Nickel         ppm         ASTM D5185m         >2         0         0         0           All component wear rates are normal.         Nickel         ppm         ASTM D5185m         >2         0         0         0         0           All component wear rates are normal.         None         None         None         0         <1         2         3           None         ppm         ASTM D5185m         >20         1         2         3           Tin         ppm         ASTM D5185m         >20         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1 <td< th=""><th></th><th>Filter Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th></th></td<>		Filter Changed		Client Info		Changed	Changed		
All component wear rates are normal.       Chromium       ppm       ASTM 05185m       ≥0       1       <1       2         Nickel       ppm       ASTM 05185m       >       <1       <1       <1       <1         Silver       ppm       ASTM 05185m       >       0       <1       <1       <1         Silver       ppm       ASTM 05185m       >2       0       0       <1       2         Aluminum       ppm       ASTM 05185m       >20       1       2       3       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1<       <1       <1       <1<		Sample Status				NORMAL	NORMAL	NORMAL	
All component wear rates are normal.       Chromium       ppm       ASTM 05185m       ≥0       1       <1       2         Nickel       ppm       ASTM 05185m       >       <1       <1       <1       <1         Silver       ppm       ASTM 05185m       >       0       <1       <1       <1         Silver       ppm       ASTM 05185m       >2       0       0       <1       2         Aluminum       ppm       ASTM 05185m       >20       1       2       3       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1       <1<       <1       <1       <1<	WEAR All component wear rates are normal.	Iron	ppm	ASTM D5185m	>200	13	12	15	
Nicket         ppm         Astructions         c1         c1 <thc1< th=""> <thc1< th=""> <thc1< th=""></thc1<></thc1<></thc1<>		Chromium		ASTM D5185m	>20		<1	2	
Silver         ppm         ASTM D518m         >2         0         0         0           Auminum         ppm         ASTM D518m         >30         11         6         8           Lead         ppm         ASTM D518m         >20         1         2         3           Copper         ppm         ASTM D518m         >20         1         2         3           Tin         ppm         ASTM D518m         20         1         2         3           Vanadium         ppm         ASTM D518m         -20         1         -1         0         0           Vanadium         ppm         ASTM D518m         -20         10         6         8           Vanadium         ppm         ASTM D518m         -20         10         6         8           Vanadium         ppm         ASTM D518m         -20         10         6         8           Potassium         ppm         ASTM D518m         -20         10         6         8           Opta         Contration of any contamination in the oil.         Silit         Scalar         Visual         NONE         NONE         NONE           Suid ation of any contamination in the oil.		Nickel	ppm	ASTM D5185m	>5	<1	<1	0	
Aluminum         ppm         ASIM DS18m         >30         11         6         8           Lead         ppm         ASIM DS18m         >20         -1         2         3           Tin         ppm         ASIM DS18m         >20         -1         <1         <1           Vanadum         ppm         ASIM DS18m         >20         -1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1         1<         <1<		Titanium		ASTM D5185m		3	<1	<1	
Lead         ppm         ASTM D5165m         >-40         0         < -1		Silver	ppm	ASTM D5185m	>2	0	0	0	
Copper         ppm         ASTM D5185m         >20         1         2         3           Tin         ppm         ASTM D5185m         >20         <1         <1         <1         <1           Vanadium         ppm         ASTM D5185m         >20         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1         <1         <1         1 <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>&gt;30</th> <th>11</th> <th>6</th> <th>8</th>		Aluminum	ppm	ASTM D5185m	>30	11	6	8	
Tin         ppm         ASTM D5185m         >20         <1		Lead	ppm	ASTM D5185m	>40	0	<1	2	
Vanadium         ppm         ASTM D5185m          <1		Copper	ppm	ASTM D5185m	>20	1	2	3	
White Metal Yellow Metal         scalar         'Visual         NONE		Tin	ppm	ASTM D5185m	>20	<1	<1	<1	
Yeilow Metal         scalar         *Visual         NONE         NONE         NONE         NONE           CONTAMINATION         ppm         ASTM 05185m         >20         <1         2         1           There is no indication of any contamination in the oil.         Potassium         ppm         ASTM 05185m         >20         <1         2         1           Fuel         WC Method         >6.0         <1.0         <1.0         <1.0         <1.0           Water         WC Method         >6.0         <1.0         <1.0         <1.0         <1.0           Glycol         WC Method         NCB         NEG         NEG         NEG         NEG           Sott %         %         *ASTM 07844         >3         0.2         0.3         0.4           Nitration         Abs/cm         *ASTM 07844         >3         0.2         0.3         0.4           Sulfation         Abs/cm         *ASTM 07844         >3         0.2         0.3         0.4           Sulfation         Abs/cm         *ASTM 07844         >3         0.2         0.8         NONE         NONE         NONE         NONE         NONE         NONE         NONE         NONE         NONE		Vanadium	ppm	ASTM D5185m		<1	0	0	
Silicon         ppm         ASTM D5185n         >20         10         6         8           There is no indication of any contamination in the oil.         Potassium         ppm         ASTM D5185n         >20         <1         2         1           Fuel         WC Method         >6.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0         <1.0		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Potassium         ppm         ASTM D5185m         >20         <1		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
Potassium         ppm         ASTM D5185m         >20         <1	CONTAMINATION	Silicon	ppm	ASTM D5185m	>20	10	6	8	
FLUID CONDITION         Solid         Viol		Potassium		ASTM D5185m	>20	<1	2	1	
Glycol         WC Method         NEG         NEG         NEG           Soot %         %         *ASTM D7844         >3         0.2         0.3         0.4           Nitration         Abs/cm         *ASTM D7844         >3         0.2         0.3         0.4           Nitration         Abs/cm         *ASTM D7845         >30         21.7         23.0         23.0           Sulfation         Abs/tm         *ASTM D7845         >30         NONE         NORE		Fuel		WC Method	>6.0	<1.0	<1.0	<1.0	
Sot %         %         *ASTM D7844         >3         0.2         0.3         0.4           Nitration         Abs/cm         *ASTM D7624         >20         6.8         8.3         9.4           Sulfation         Abs/tmm         *ASTM D7624         >20         6.8         8.3         9.4           Sulfation         Abs/tmm         *ASTM D7624         >30         21.7         23.0         23.9           Silt         scalar         *Visual         NONE         NONE         NONE         NONE         NONE         NONE           Debris         scalar         *Visual         NONE         NONE         NONE         NONE         NONE           Sand/Dirt         scalar         *Visual         NORM         NORML         NORML         NORML         NORML           Appearance         scalar         *Visual         NORM         NORML		Water		WC Method	>0.2	NEG	NEG	NEG	
NitrationAbs/cm'ASTM D7624>206.88.39.4SulfationAbs/tm'ASTM D7115>3021.723.023.9Siltscalar'VisualNONENONENONENONENONEDebrisscalar'VisualNONENONENONENONENONESand/Dirtscalar'VisualNONENONENONENONENONEAppearancescalar'VisualNORMNORMLNORMLNORMLNORMLOdorscalar'VisualNORMNORMLNORMLNORMLNORMLDebrisscalar'VisualNORENORENORENORENOREAppearancescalar'VisualNORMNORMLNORMLNORMLNORMLOdorscalar'VisualNORENORNORMLNORMLNORMLInte condition of the oil is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m<<101BariumppmASTM D5185m<<100114<11<11ManganeseppmASTM D5185m<<1<1< <td>&lt;1</td> <11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11<11 <th>Glycol</th> <th></th> <th>WC Method</th> <th></th> <th>NEG</th> <th>NEG</th> <th>NEG</th>		<1	Glycol		WC Method		NEG	NEG	NEG
SulfationAbs/.tm'ASTM D7415>3021.723.023.9Siltscalar'VisualNONENONENONENONENONENONEDebrisscalar'VisualNONENONENONENONENONENONESand/Dirtscalar'VisualNONENONENONENONENONENONENONEAppearancescalar'VisualNORMNORMNORMNORMLNORMLNORMLNORMLOdorscalar'VisualNORMNORMNORMLNORMLNORMLNORMLNORMLOdorscalar'VisualNORNORMNORMLNORMLNORMLNORMLNORMLOdorscalar'Visualsolar'VisualsolarNORNORMLNORMLNORMLNorescalar'Visualsolar'VisualsolarNORNORMLNORMLNORMLOdorscalar'Visualsolar'V		Soot %	%	*ASTM D7844	>3	0.2	0.3	0.4	
Siltscalar*VisualNONENONENONENONENONENONEDebrisscalar*VisualNONENONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLNORMLNORMLCodorscalar*VisualNORMNORMLNORMLNORMLNORMLNORMLCodorscalar*VisualNORNORMNORMLNORMLNORMLNORMLCodorscalar*VisualNORNORNORMLNORMLNORMLNORMLCodorscalar*VisualNORNORNORNORNORNOREmulsified Waterscalar*VisualNORNORNORNORNORNORFLUID CONDITIONSodiumppmASTM D5185m>50<101BoronppmASTM D5185m416400217BariumppmASTM D5185m<687103114MarganeseppmASTM D5185m<6413449607CalciumppmASTM D5185m<61183449607CalciumppmASTM D5185m<61142014951619PhosphorusppmASTM D51		Nitration	Abs/cm	*ASTM D7624	>20	6.8	8.3	9.4	
Debrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGNEGNEGFLUID CONDITIONSodiumppmASTM D5185m>50<1011100217BariumppmASTM D5185m>50<100011001100110011001100110011001100110011001100110011100111001110011100111 <t< th=""><th>Sulfation</th><th>Abs/.1mm</th><th>*ASTM D7415</th><th>&gt;30</th><th>21.7</th><th>23.0</th><th>23.9</th></t<>		Sulfation	Abs/.1mm	*ASTM D7415	>30	21.7	23.0	23.9	
Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGNEGNEGFLUID CONDITIONSodiumppmASTM D5185m>50<10111 <th>Silt</th> <th>scalar</th> <th>*Visual</th> <th>NONE</th> <th>NONE</th> <th>NONE</th> <th>NONE</th>		Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
Appearancescalar*VisualNORML<		Debris	scalar	*Visual					
Normal Emulsified Waterscalar*VisualNORMLNORMLNORMLNORMLNORMLFLUID CONDITIONSodiumppmASTM D5185m>0.2NEGNEGNEGThe BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m>50<101BariumppmASTM D5185mI4164002171001MolybdenumppmASTM D5185mI87103114111 <t< th=""><th></th><th>scalar</th><th></th><th></th><th></th><th></th><th></th></t<>			scalar						
Emulsified Waterscalar*Visual>0.2NEGNEGFLUID CONDITIONThe BN result indicates that there is suitable alkalinity remaining in the oil is suitable for further service.SodiumppmASTM D5185m>50<101BoronppmASTM D5185m416400217BariumppmASTM D5185m<100MolybdenumppmASTM D5185m<<100MaganeseppmASTM D5185m<<1<1<1MagnesiumppmASTM D5185m<413449607CalciumppmASTM D5185m<1412014951619PhosphorusppmASTM D5185m<111181001731ZincppmASTM D5185m<12901183868SulfurppmASTM D5185m<1330633903084									
FLUID CONDITIONSodiumppmASTM D5185m>50<1									
BoronppmASTM D5185m416400217The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.pmASTM D5185m<100MolybdenumppmASTM D5185m87103114ManganeseppmASTM D5185m<1<1<1MagnesiumppmASTM D5185m<13449607CalciumppmASTM D5185m142014951619PhosphorusppmASTM D5185m11181001731ZincppmASTM D5185m12901183868SulfurppmASTM D5185m330633903084		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
BoronppmASTM D5185m416400217The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.pmASTM D5185m<100MolybdenumppmASTM D5185m87103114ManganeseppmASTM D5185m<1<1<1MagnesiumppmASTM D5185m<13449607CalciumppmASTM D5185m142014951619PhosphorusppmASTM D5185m11181001731ZincppmASTM D5185m12901183868SulfurppmASTM D5185m330633903084	FLUID CONDITION	Sodium	ppm	ASTM D5185m	>50	<1	0	1	
BariumppmASTM D5185m<1									
Molybdenum       ppm       ASTM D5185m       87       103       114         Manganese       ppm       ASTM D5185m       <1       <1       <1         Magnesium       ppm       ASTM D5185m       <13       <449       607         Calcium       ppm       ASTM D5185m       1420       1495       1619         Phosphorus       ppm       ASTM D5185m       1118       1001       731         Zinc       ppm       ASTM D5185m       1290       1183       868         Sulfur       ppm       ASTM D5185m       3306       3390       3084									
Manganese       ppm       ASTM D5185m       <1							103	114	
Magnesium       ppm       ASTM D5185m       413       449       607         Calcium       ppm       ASTM D5185m       1420       1495       1619         Phosphorus       ppm       ASTM D5185m       1118       1001       731         Zinc       ppm       ASTM D5185m       1290       1183       868         Sulfur       ppm       ASTM D5185m       3306       3390       3084									
Phosphorus         ppm         ASTM D5185m         1118         1001         731           Zinc         ppm         ASTM D5185m         1290         1183         868           Sulfur         ppm         ASTM D5185m         3306         3390         3084		Magnesium	ppm	ASTM D5185m		413	449	607	
Zinc         ppm         ASTM D5185m         1290         1183         868           Sulfur         ppm         ASTM D5185m         3306         3390         3084		Calcium	ppm	ASTM D5185m		1420	1495	1619	
Sulfur         ppm         ASTM D5185m         3306         3390         3084		Phosphorus	ppm	ASTM D5185m		1118	1001	731	
		Zinc	ppm	ASTM D5185m		1290	1183	868	
Oxidation         Abs/.1mm         *ASTM D7414         >25         15.5         17.0         18.1			ppm	ASTM D5185m		3306	3390	3084	
		Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	17.0	18.1	

Base Number (BN) mg KOH/g ASTM D2896

Visc @ 100°C cSt ASTM D445 14.4

7.9

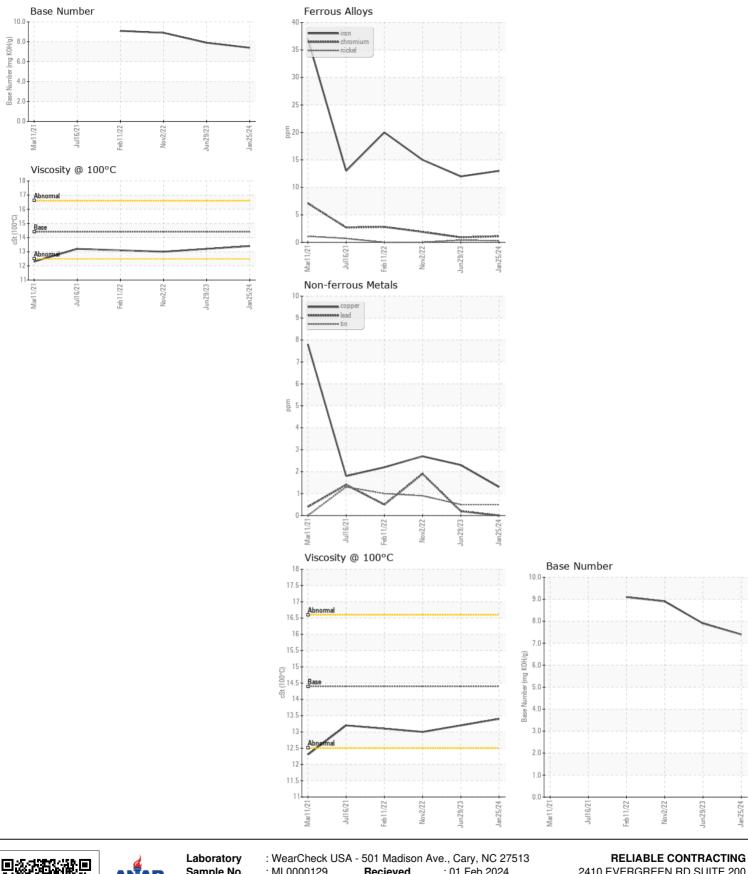
13.2

7.4

13.4

8.9

13.0



Recieved :01 Feb 2024 2410 EVERGREEN RD SUITE 200 Sample No. : ML0000129 GAMBRILLS, MD Lab Number : 06076579 Diagnosed : 02 Feb 2024 : 10858670 Diagnostician : Don Baldridge US 21054 Unique Number Test Package : CONST (Additional Tests: TBN) Contact: RUSSELL HATFIELD Certificate L2367 RHATFIELD@RELIABLECONTRACTING.COM To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (410)987-1851 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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