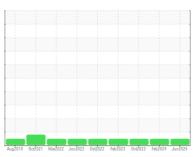


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **288110** 

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

## DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

## Contamination

There is no indication of any contamination in the oil.

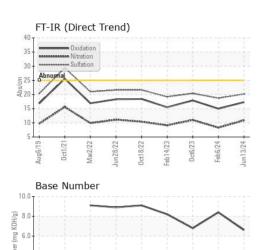
### Fluid Condition

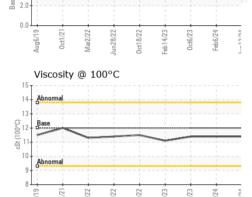
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION   method   limit/base   current   history1   PCA0108301   Sample Number   Client Info   13 Jun 2024   06 Feb 2024   06 Oct 2023   4760   01   02   02   06 Feb 2024   06 Oct 2023   07   08   09   00   00   00   00   00   00	318)		Aug2019 Oc	t2021 Mar2022 Jun2022	Oct2022 Feb2023 Oct2023 Feb20	24 Jun2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date   Client Info   0 97484 94760	Sample Number		Client Info		PCA0128861	PCA0117001	PCA0106301
Machine Age         mls         Client Info         0         97484         94760           Oil Age         mls         Client Info         N/A         Not Changed         Changed           Coll Changed Sample Status         Client Info         N/A         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         historyt         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         nurrent         history1         history2           Iron         pm         ASTM D5185m         >100         37         24         70           Chromium         ppm         ASTM D5185m         >20         0         <1         <1           Iron         ppm         ASTM D5185m         >20         0         <1         <1           Silver         ppm         ASTM D5185m         >20         0         <1         <1 <t< th=""><th>•</th><th></th><th>Client Info</th><th></th><th>13 Jun 2024</th><th>06 Feb 2024</th><th>06 Oct 2023</th></t<>	•		Client Info		13 Jun 2024	06 Feb 2024	06 Oct 2023
Oil Changed Sample Status         Client Info         N/A         Not Changd NORMAL         Changed NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5.5         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         37         24         70           Chromium         ppm         ASTM D5185m         >20         0         <1         <1           Nickel         ppm         ASTM D5185m         >20         0         <1         <1           Silver         ppm         ASTM D5185m         >3         0         0         <1           Lead         ppm         ASTM D5185m         >40         0         <1         <1           Copper         ppm         ASTM D5185m         >330         <1         2         2		mls	Client Info		0	97484	94760
Sample Status	Oil Age	mls	Client Info		0	0	0
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >5         <1.0         <1.0         <1.0           Water         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         37         24         70           Chromium         ppm         ASTM D5185m         >20         0         <1         <1           Nickel         ppm         ASTM D5185m         >4         0         0         <1         0           Silver         ppm         ASTM D5185m         >3         0         0         0         <1         0           Silver         ppm         ASTM D5185m         >20         4         2         6         6         <1         0         <1         0         <1         0         <1         1         0         <1         2         2         2         1         1         2         2         2         1         1         1         1         1         1         1<	Oil Changed		Client Info		N/A	Not Changd	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         37         24         70           Chromium         ppm         ASTM D5185m         >20         0         <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >20         0         <1         <1           Nickel         ppm         ASTM D5185m         >4         0         0         <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	37	24	70
Titanium         ppm         ASTM D5185m         0         -1         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >20         4         2         6           Lead         ppm         ASTM D5185m         >40         0         0         <1         2         2         2           Copper         ppm         ASTM D5185m         >330         <1         2         2         2         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	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >20         4         2         6           Lead         ppm         ASTM D5185m         >40         0         0         <1         2           Copper         ppm         ASTM D5185m         >15         <1         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         <1         <1            Vanadium         ppm         ASTM D5185m         0         <1         <1         <1            Cadmium         ppm         ASTM D5185m         0         0         0         0            Boron         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         62         60         68           Mangaesium         ppm         ASTM D5185m         50         972         912         1051	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead         ppm         ASTM D5185m         >40         0         0         <1           Copper         ppm         ASTM D5185m         >330         <1         2         2           Tin         ppm         ASTM D5185m         >15         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         <1         <1           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Barium         ppm         ASTM D5185m         2         5         5         4           Barium         ppm         ASTM D5185m         0         0         0         0         0           Barium         ppm         ASTM D5185m         50         62         60         68           Mangaesium         ppm         ASTM D5185m         950         972	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper         ppm         ASTM D5185m         >330         <1         2         2           Tin         ppm         ASTM D5185m         >15         <1	Aluminum	ppm	ASTM D5185m	>20	4	2	6
Tin         ppm         ASTM D5185m         >15         <1         <1         <1         <1           Vanadium         ppm         ASTM D5185m         0         <1         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         995         1120         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         metho	Lead	ppm	ASTM D5185m	>40	0		<1
Vanadium         ppm         ASTM D5185m         0         <1         <1           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         5         5         4           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1<	Copper	ppm	ASTM D5185m	>330	<1	2	2
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         5         5         4           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         50         62         60         68           Manganesium         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silic	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron         ppm         ASTM D5185m         2         5         5         4           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         0         <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         0         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         50         62         60         68           Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         1050         1120         1022         1215           Zinc         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Solium         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844	Boron	ppm					
Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         1180         1318         1178         1520           Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7	Barium	ppm			-		ū
Magnesium         ppm         ASTM D5185m         950         972         912         1051           Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         1180         1318         1178         1520           Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         >25         4         0         4           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *AST		ppm					
Calcium         ppm         ASTM D5185m         1050         1102         1061         1200           Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         1180         1318         1178         1520           Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION         method	-	ppm					
Phosphorus         ppm         ASTM D5185m         995         1120         1022         1215           Zinc         ppm         ASTM D5185m         1180         1318         1178         1520           Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414	-				-		
Zinc         ppm         ASTM D5185m         1180         1318         1178         1520           Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/.1mm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM							
Sulfur         ppm         ASTM D5185m         2600         3587         2948         3506           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9							
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9							
Silicon         ppm         ASTM D5185m         >25         4         0         6           Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9			ASTM D5185m	2600	3587	2948	3506
Sodium         ppm         ASTM D5185m         2         1         0           Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9		ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         4         0         4           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9				>25			
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9		ppm					
Soot %         %         *ASTM D7844 >3         0.9         0.5         0.7           Nitration         Abs/cm         *ASTM D7624 >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415 >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         17.3         15.0         17.9		ppm	ASTM D5185m	>20	4	0	4
Nitration         Abs/cm         *ASTM D7624         >20         10.9         8.3         11.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         17.3         15.0         17.9	INFRA-RED		method	limit/base		history1	history2
Sulfation         Abs/.1mm         *ASTM D7415 >30         20.2         18.7         20.4           FLUID DEGRADATION method limit/base current history1 history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         17.3         15.0         17.9							
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     17.3     15.0     17.9							
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.2	18.7	20.4
	FLUID DEGRA	OITAC	method	limit/base	current	history1	history2
Base Number (BN)         mg KOH/g         ASTM D2896         6.6         8.4         6.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.3	15.0	17.9
	Base Number (BN)	mg KOH/g	ASTM D2896		6.6	8.4	6.8



# **OIL ANALYSIS REPORT**

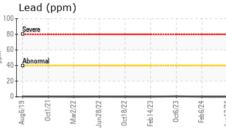


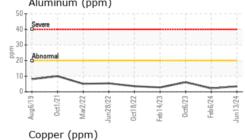


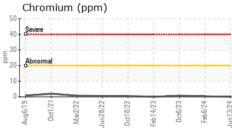
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

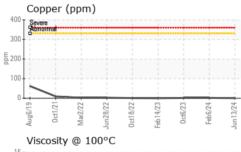
FLUID FROF	ENTIES	method			HISTOLYT	HISTOLYZ
Visc @ 100°C	cSt	ASTM D445	12.00	11.4	11.4	11.4

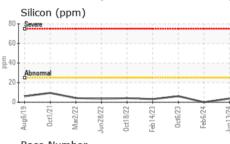
Iron 250 <del>-</del>	(ppi	m)						
Severe	-				į			
50-								
00 Abnor	nal							-
50	,					^		
0							<u> </u>	
91/8	1/21	/22	3/22	3/22	1/23	Oct6/23 -	,724	3/24
Aug6/19	Oct1/	Mar2/22	Jun28/23	Oct18/22	Feb14/2	Oct	Feb6/24	Jun13/24
Alum	inur	n (nı	,		_			7
50 +	iii iui	(PI						
Savara								

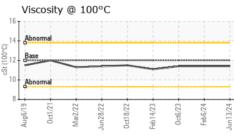


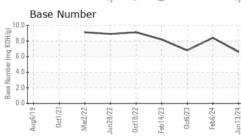
















Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Lab Number : 06216644

: PCA0128861 Unique Number : 11089508

Received : 21 Jun 2024 **Tested** Diagnosed

: 24 Jun 2024

: 24 Jun 2024 - Wes Davis

US 07604 Contact: MIKE LONGETTE mlongette@millertransgroup.com

**MILLER TRUCK LEASING #119** 

HASBROUCK HEIGHTS, NJ

39 INDUSTRIAL AVE

Test Package : MOB 1 ( Additional Tests: TBN ) Certificate 12367

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.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (201)528-7053

T: