

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# KAESER DSD 175 6221021 (S/N 1016)

Compressor

KAESER SIGMA (OEM) S-460 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

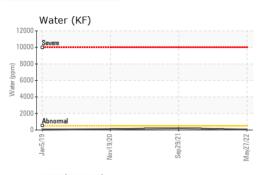
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

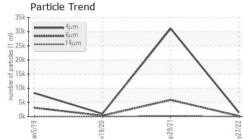
### Fluid Condition

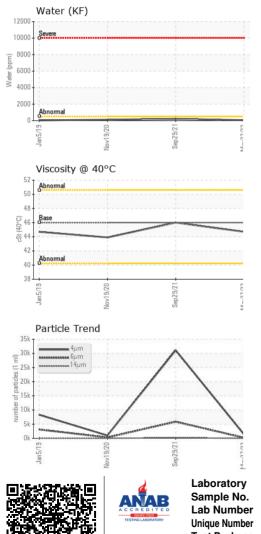
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Number     Client Info     KC1007342     KC99456     KC85173       Sample Date     Client Info     27 May 2022     29 Sep 2021     19 Nov 2020       Machine Age     hrs     Client Info     11861     9292     6954       Oil Age     Client Info     11861     9297     2338     3330       Oil Changed     Client Info     Changed     Not Changed     Not Changed     Not Changed       Sample Status     method     limit/base     current     history1     history2       Kron     ppm     ASTM 05186m     >10     0     0     <1     0       Kronelium     ppm     ASTM 05186m     >10     0     0     <1     0       Silver     ppm     ASTM 05186m     >10     0     0     0     0     0       Gapper     ppm     ASTM 05186m     >10     0     0     0     0     0     0       Calamium     ppm     ASTM 05186m     0     0     0     0     0     0     <			Jan201	9 Nov2020	Sep2021 N	lay2022	
Sample Date     Client Info     27 May 2022     29 Sep 2021     19 Nov 2020       Machine Age     hrs     Client Info     11861     9292     6954       Oil Age     hrs     Client Info     4907     2338     3330     Oil Changed     Collent Info     Changed     NorMAL     ABNORMAL     NorMAL     No	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     11861     9292     6954       Oil Age     hrs     Client Info     4907     2338     3330       Oil Changed     Client Info     4907     2338     3330       Oil Changed     Client Info     4907     2338     3330       Sample Status     Imit/base     current     history1     history1       WeAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >10     0     0     0       Capper     ppm     ASTM D5185m     >10     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Cadeatium     ppm     ASTM D5185m </td <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <th>KC1007342</th> <td>KC99456</td> <td>KC85173</td>	Sample Number		Client Info		KC1007342	KC99456	KC85173
Oil Age     Inrs     Client Info     4907     2338     3330       Oil Changed     Client Info     Changed     Not Changed     Changed       Sample Status     Imit Info     Changed     Not Changed     Not Changed       WEAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM 05185m     >50     0     <1	Sample Date		Client Info		27 May 2022	29 Sep 2021	19 Nov 2020
Oil Changed Sample Status     Client Info     Changed NORMAL     Not Changed ABNORMAL     Changed NORMAL     Not Changed ABNORMAL     Nor Changed NORMAL     Nor Change	Machine Age	hrs	Client Info		11861	9292	6954
Sample Status     method     imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     0     <1	Oil Age	hrs	Client Info		4907	2338	3330
WEAR METALS     method     limit/base     current     history1     history2       Kromium     ppm     ASTM 05185m     >50     0     <1	Oil Changed		Client Info		Changed	Not Changd	Changed
Iron     ppm     ASTM D5185m     >50     0     <1     <1       Chromium     ppm     ASTM D5185m     >10     0     0     <1	Sample Status				NORMAL	ABNORMAL	NORMAL
Ppm     ASTM D5185m     >10     0     0     <1       Nickel     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >2     0     <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >3     0     0     0       Titanium     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >10     <1	Iron	ppm	ASTM D5185m	>50	0	<1	<1
Titanium     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >2     0     <1	Chromium	ppm	ASTM D5185m	>10	0	0	<1
Silver     ppm     ASTM D5185m     >2     0     <1     0       Aluminum     ppm     ASTM D5185m     >10     -1     0     0       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     8     9     10       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Addition     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     Imit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     <1	Nickel	ppm	ASTM D5185m	>3	0	0	0
Silver     ppm     ASTM D5185m     >2     0     <1     0       Aluminum     ppm     ASTM D5185m     >10     -11     0     0       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     8     9     10       Tin     ppm     ASTM D5185m     >50     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     90     <1	Titanium	ppm	ASTM D5185m	>3	0	0	0
Aluminum     ppm     ASTM D5185m     >10     <1     0     0       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     8     9     10       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     imit/base     current     history1     history2       Boron     ppm     ASTM D5185m     90     0     4     <1	Silver		ASTM D5185m	>2	0	<1	0
Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     8     9     10       Tin     ppm     ASTM D5185m      0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Magnese     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     0     0     0     0       Silicon     ppm     ASTM D5185m     2     1     0     0 </td <td>Aluminum</td> <td></td> <td></td> <td>&gt;10</td> <th></th> <td>0</td> <td>0</td>	Aluminum			>10		0	0
Copper     ppm     ASTM D5185m     >50     8     9     10       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     2     0     0     0     0       Zalcium     ppm     ASTM D5185m     2     1     0							
Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     90     <1					-		
Antimony     ppm     ASTM D5185m      0     <1       Vanadium     ppm     ASTM D5185m     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Calcium     ppm     ASTM D5185m     2     0     0     0     0       Phosphorus     ppm     ASTM D5185m     2     0     0     0     0       Solicon     ppm     ASTM D5185m     2     0     0     0     0       Solicon     ppm     ASTM D5185m     25     <1					-		
Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     90     0     4     <1       Molybdenum     ppm     ASTM D5185m     0     0     0     <11     2       Calcium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     2     0     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     <1     0     3       Sodium     ppm     ASTM D5185m     >20				~10	-		
Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     90     0     4     <1       Molybdenum     ppm     ASTM D5185m     90     0     0     0     0       Magnesium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     2     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     0     0     0       Vater     ppm     ASTM D6304     >0.05     0.021     0.011<	•						
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     <1					-		
Boron     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     90     0     4     <1		ррш		limit/base	-		
Barium     ppm     ASTM D5185m     90     0     4     <1       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Manganese     ppm     ASTM D5185m     90     <1				iinii/base			
Molybdenum     ppm     ASTM D5185m     0     0     0     0       Manganese     ppm     ASTM D5185m     90     <1				00			
Marganese     ppm     ASTM D5185m     0     <1     11     2       Magnesium     ppm     ASTM D5185m     90     <1				90	-		
Magnesium     ppm     ASTM D5185m     90     <1     11     2       Calcium     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     2     0     0     0       Zinc     ppm     ASTM D5185m     0     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     <1	-						
Calcium     ppm     ASTM D5185m     2     0     0     0       Phosphorus     ppm     ASTM D5185m     0     <1	-				-		
Phosphorus     ppm     ASTM D5185m     0     <1     5       Zinc     ppm     ASTM D5185m     0     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     <1     0     3       Sodium     ppm     ASTM D5185m     >25     <1     0     3       Sodium     ppm     ASTM D5185m     >20     0     0     0       Potassium     ppm     ASTM D5185m     >20     0     0     0       Water     %     ASTM D6304     >0.05     0.005     0.021     0.011       ppm Water     ppm     ASTM D7647     1380     31098     989       Particles >4µm     ASTM D7647     >1300     200     5864     306       Particles >6µm     ASTM D7647     >80     9     187     11       Particles >21µm     ASTM D7647     >80     9     187     11       Par	0						
Zinc     ppm     ASTM D5185m     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     <1		ppm		2			
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     <1		ppm					
Silicon     ppm     ASTM D5185m     >25     <1     0     3       Sodium     ppm     ASTM D5185m     <1	Zinc	ppm	ASTM D5185m		0	0	0
Sodium     ppm     ASTM D5185m     <1     <1     0       Potassium     ppm     ASTM D5185m<>20     0     0     0       Water     %     ASTM D5185m<>20     0     0     0       Water     %     ASTM D6304     >0.05     0.005     0.021     0.011       ppm Water     ppm     ASTM D6304     >500     58.4     216.1     113.6       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     1380     31098     989       Particles >6µm     ASTM D7647     >1300     200     ▲ 5864     306       Particles >14µm     ASTM D7647     >80     9     ▲ 187     11       Particles >21µm     ASTM D7647     >20     3     ▲ 21     1       Particles >38µm     ASTM D7647     >3     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0     0       Ol Cleanliness     ISO 4406 (c	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     0     0     0       Water     %     ASTM D6304     >0.05     0.005     0.021     0.011       ppm     Water     ppm     ASTM D6304     >500     58.4     216.1     113.6       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     1380     31098     989       Particles >6µm     ASTM D7647     >1300     200     ▲ 5864     306       Particles >14µm     ASTM D7647     >80     9     ▲ 187     11       Particles >21µm     ASTM D7647     >20     3     ▲ 21     1       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1	Silicon	ppm	ASTM D5185m	>25	<1	0	
Water     %     ASTM D6304     >0.05     0.005     0.021     0.011       ppm Water     ppm     ASTM D6304     >500     58.4     216.1     113.6       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     1380     31098     989       Particles >6µm     ASTM D7647     >1300     200     ▲ 5864     306       Particles >14µm     ASTM D7647     >80     9     ▲ 187     11       Particles >21µm     ASTM D7647     >20     3     ▲ 21     1       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0     0       Oli Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Sodium	ppm	ASTM D5185m		<1	<1	0
ppm Water     ppm     ASTM D6304     >500     58.4     216.1     113.6       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     1380     31098     989       Particles >6µm     ASTM D7647     >1300     200     5864     306       Particles >6µm     ASTM D7647     >1300     200     5864     306       Particles >14µm     ASTM D7647     >20     3     187     11       Particles >21µm     ASTM D7647     >20     3     21     1       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)    /17/13     18/15/10     20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Potassium	ppm	ASTM D5185m	>20	0	0	0
FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     1380     31098     989       Particles >6µm     ASTM D7647     >1300     200     ▲ 5864     306       Particles >14µm     ASTM D7647     >80     9     ▲ 187     11       Particles >21µm     ASTM D7647     >20     3     ▲ 21     1       Particles >21µm     ASTM D7647     >4     0     0     0       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Water	%	ASTM D6304	>0.05	0.005	0.021	0.011
Particles >4µm   ASTM D7647   1380   31098   989     Particles >6µm   ASTM D7647   >1300   200   ▲ 5864   306     Particles >14µm   ASTM D7647   >80   9   ▲ 187   11     Particles >14µm   ASTM D7647   >20   3   ▲ 21   1     Particles >21µm   ASTM D7647   >20   3   ▲ 21   1     Particles >38µm   ASTM D7647   >4   0   0   0     Particles >71µm   ASTM D7647   >3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/15/10   ▲ 20/15   15/11	ppm Water	ppm	ASTM D6304	>500	58.4	216.1	113.6
Particles >6μm     ASTM D7647     >1300     200     ▲ 5864     306       Particles >14μm     ASTM D7647     >80     9     ▲ 187     11       Particles >21μm     ASTM D7647     >20     3     ▲ 21     1       Particles >21μm     ASTM D7647     >20     3     ▲ 21     1       Particles >38μm     ASTM D7647     >4     0     0     0       Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     ▲ 20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14µm     ASTM D7647     >80     9     ▲ 187     11       Particles >21µm     ASTM D7647     >20     3     ▲ 21     1       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >38µm     ASTM D7647     >4     0     0     0       Particles >71µm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     ▲ 20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >4µm						
Particles >21μm     ASTM D7647     >20     3     ▲ 21     1       Particles >38μm     ASTM D7647     >4     0     0     0       Particles >38μm     ASTM D7647     >4     0     0     0       Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     ▲ 20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >6µm		ASTM D7647	>1300		▲ 5864	306
Particles >38μm     ASTM D7647     >4     0     0     0       Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     ▲ 20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >14µm		ASTM D7647	>80	9	<b>1</b> 87	11
Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/15/10     Δ 20/15     15/11       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >21µm		ASTM D7647	>20	3	<u> </u>	1
Oil Cleanliness   ISO 4406 (c) >/17/13   18/15/10   20/15   15/11     FLUID DEGRADATION   method   limit/base   current   history1   history2	Particles >38µm		ASTM D7647	>4	0	0	0
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	18/15/10	▲ 20/15	15/11
Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.50 0.384 0.380	FLUID DEGRADA		method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	0.50	0.384	0.380









**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
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	44.7	46.0	43.9
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color						
Bottom						

Ferrous Alloys Particle Count 491 520 122,880 nicke 30,720 7,680 20 8 May27/22 Sep29/21 4406 (per 1 1,920 19999 articles Non-ferrous Metals 480 6 10 120 30 May27/22 Sep 29/21 Vov19/20 Viscosity @ 40°C Acid Number 55 (B) 0.60 HOX 0.48 50 Ē 0.36 Ba 40°( 45 ළි 0.24 ŝ Abnorma 40 Jan 0.12 0.00 P 35 Sep29/21. May27/22 -Nov19/20 Vov19/20 Sep 29/21 May27/22 an5/10 an5 : WearCheck USA - 501 Madison Ave., Cary, NC 27513 PERMATEX : KC1007342 Received : 03 Jun 2022 6875 PARKLAND BLVD Lab Number : 05560640 Tested SOLON, OH : 06 Jun 2022 Unique Number : 1000028 Diagnosed : 06 Jun 2022 - Don Baldridge US 44139 Test Package : IND 2 Contact: Certificate L2367 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:

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