Graphic Arts Technical Foundation • 200 Deer Run Road • Sewickley, PA 15143-2600 • Phone: 412·741·6860 • Fax: 412·741·2311

April 9, 2002

Mr. Keith Duchene
Gans Ink & Supply Co.
1441 Boyd St.
Los Angeles, CA 90033

Dear Mr. Duchene:

We have completed testing on the samples you submitted. You were interested in determining if **"High Tack Bengal Process Series"** inks conformed to ISO 2846-1.

ISO 2846-1 - was performed using an IGT Printability Tester. The four inks were printed on Phoenix Imperial APCO from Scheufelen and on Potlatch 100# Gloss Text printed with a black ink. Each color was printed over a range of ink film thicknesses specified in the standard. Ink film thickness was calculated by weighing the printing disc before and after printing and dividing by the product of the printed area and the density of the ink. The prints were allowed to dry for 24 hours before colorimetric measurements were made. All colorimetric readings were done with an X-Rite 530 Spectrodensitometer at $D_{50}/2^{\circ}$ with $45^{\circ}/0^{\circ}$ geometry. Delta E's and transparency values (T) were calculated and compared to the values stated in the standard. An ink conforms to the standard only if it meets both the color requirements and the transparency requirements.

COLORIMETRIC VALUE

SAMPLE	DELTA E	STD DELTA E
YELLOW	1.73-9.69	4.0
MAGENTA	1.38-4.50	5.0
CYAN	1.58-7.60	3.0

SAMPLE	L*	a*	b*
STD	18.01	0.80	-0.56
BLACK	9.50-12.36	-0.09-0.38	-0.14-0.96
TOLERANCE	=/< 18.0	+/- 1.5	+/- 3.0

The data for the inks represents values over a range of ink film thicknesses. The yellow and cyan delta E's were above the STD delta E's for the higher ink film thicknesses. The thinner ink films still had delta E's below the standard and are therefore in conformance with ISO 2846.

NOTICE: The conclusions drawn in this report are based on the facts and conditions that were observed by or reported to us. They include GATF test results and/or information believed to be reliable. Since there are so many variables in the process, these conclusions might not remain valid if the information given us was incorrect or incomplete. We do not assume any responsibility for the use or application of this report. It is confidential and is not to be quoted or published.

TRANSPARENCY

SAMPLE	TRANSPARENCY VALUE	STD TRANSPARENCY VALUE
YELLOW	0.13	0.08
MAGENTA	0.37	0.12
CYAN	0.39	0.20

Transparency values higher than the standard values are considered acceptable with regards to ISO 2846.

The **"High Tack Bengal Process Series"** inks are in conformance with ISO 2846.

I hope this information is useful. If you have any questions or require additional testing, please contact me.

Sincerely,

John E. Stack
Lab Technician
TLS 5337

Graphic Arts Technical Foundation • 200 Deer Run Road • Sewickley, PA 15143-2600 • Phone: 412·741·6860 • Fax: 412·741·2311

November 18, 2002

Mr. Keith Duchene
Gans Ink & Supply Co.
1441 Boyd St.
Los Angeles, CA 90033

Dear Mr. Duchene:

We have completed testing on the samples you submitted. You were interested in determining if two yellow inks (**Chromed** and **Process**) conformed to ISO 2846-1.

ISO 2846-1 - was performed using an IGT Printability Tester. The four inks were printed on Phoenix Imperial APCO from Scheufelen and on Sterling 100# Gloss Text printed with a black ink. Each color was printed over a range of ink film thicknesses specified in the standard. Ink film thickness was calculated by weighing the printing disc before and after printing and dividing by the product of the printed area and the density of the ink. The prints were allowed to dry for 24 hours before colorimetric measurements were made. All colorimetric readings were done with an X-Rite 530 Spectrodensitometer at $D_{50}/2^{\circ}$ with $45^{\circ}/0^{\circ}$ geometry. Delta E's and transparency values (T) were calculated and compared to the values stated in the standard. An ink conforms to the standard only if it meets both the color requirements and the transparency requirements.

COLORIMETRIC VALUE

SAMPLE	L*	a*	b*	DELTA E	INK FILM THICKNESS (um)
YELLOW, CHROMED	89.42	-2.14	96.40	3.63	0.77
YELLOW, PROCESS	91.44	-5.57	97.21	2.33	0.71
STANDARD	91.00	-5.08	94.97	4.0	0.7-1.1

These were the only ink film thicknesses that had a Delta E below 4.0. Yellow inks need to have a Delta E below 4.0 for an ink film thickness between 0.7 micrometers and 1.1 micrometers. Both of these inks are in compliance for this part of the standard.

NOTICE: The conclusions drawn in this report are based on the facts and conditions that were observed by or reported to us. They include GATF test results and/or information believed to be reliable. Since there are so many variables in the process, these conclusions might not remain valid if the information given us was incorrect or incomplete. We do not assume any responsibility for the use or application of this report. It is confidential and is not to be quoted or published.

TRANSPARENCY

SAMPLE	TRANSPARENCY VALUE	STD TRANSPARENCY VALUE
YELLOW, CHROMED	0.13	0.08
YELLOW, PROCESS	0.13	0.08

Transparency values higher than the standard values are considered acceptable with regards to ISO 2846.

The **"Chromed"** and **"Process"** yellow inks are in conformance with ISO 2846.

I hope this information is useful. If you have any questions or require additional testing, please contact me.

Sincerely,

John E. Stack
Lab Technician
TLS 5337.001