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MATERIAL SAFETY DATA SHEET

DATE: 03/07/2007

PRODUCT NAME: NON-METALLIC WELD BACKING TAPE

PART NUMBER(S): 1B___, 1C___, 1S___, 1N___

DESCRIPTION: RIDGID CERAMIC BLOCK SEGMENTS CENTRALLY MOUNTED ON A 3 MIL DEAD SOFT ALUMINUM FOIL TAPE COATED WITH AN AGGRESSIVE HIGH TACK AND PEEL ACRYLIC PRESSURE SENSITIVE ADHESIVE.

INGREDIENTS:

REFRACTORY OXIDES AND SILICATES (PROPRIETARY FORMULATION).
3 MIL DEAD SOFT ALUMINUM FOIL (1145-0).
2 MIL ACRYLIC PRESSURE SENSITIVE ADHESIVE (PROPRIETARY FORMULA)
60 LB. DENSIFIED KRAFT RELEASE LINER.

PRODUCT DOES NOT CONTAIN HALOGENS, MERCURY OR CADMIUM

SECTION 1 PHYSICAL DATA

BOILING POINT: N/A
SOLUBILTY IN WATER: N/A
VAPOR PRESSURE: N/A
VAPOR DENSITY (AIR =1): N/A
% VOLATILE BY WT: 1.0% OR LESS*

* Adhesive ay contain very small amounts of Ethyl Acetate, CAS No. 141-78-6 (ACGIH TLV= 400 ppm), Isopropanol, CAS No. 67-63-0 (ACGIH TLV= 400 ppm) and Toluene, CAS No. 108-88-3 (ACGIH TLV= 50 ppm [skin]).

SECTION 2 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: >100 DEG C (ADHESIVE) **FLAMMABLE LIMITS:** LFL: N/A UFL: N/A

METHOD USED: CLOSED CUP

SPECIAL FIRE FIGHTING EQUIPMENT AND HAZARDS: RIDGID BLOCKS WILL NOT BURN AND DO NOT POSE UNUSUAL FIRE AND EXPLOSION HAZARDS. WHEN IGNITED THE PRESSURE SENSITIVE ADHESIVE WILL PRODUCE PRODUCTS OF COMBUSTION AS ORDINARY COMBUSTIBLES: CARBON DIOXIDE, CARBON MONOXIDE, ETC; DENSE SMOKE EMITTED WHEN BURNED. BECAUSE OF PHYSICAL FORM THE ADHESIVE COATING POSES NO UNUSUAL FIRE OR EXPLOSION HAZARDS.

SECTION 3 REACTIVITY DATA

STABILITY: AVOID HIGH HEAT AND FLAMES.

INCOMBATIBILTY: AVOID STRONG ACIDS & ALKALIS. (OXIDIZERS, OXALIC, HYDROFLOURIC ACID).

HAZARDOUS DECOMPOSITION PRODUCTS: MAY EVOLVE HYDROCARBON, ESTER, CARBON DIOXIDE AND CARBON MONOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION 4 SPILL, LEAK AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS: N/A

DISPOSAL METHOD: LANDFILL OR INCINERATOR PER EPA REGULATIONS.

SECTION 5 HEALTH HAZARD DATA

EYE: POSSIBLE MECHANICAL INJURY OR IRRITATION.FROM FIBER OR DUST.

SKIN CONTACT: PROLONGED OR REPEATED CONTACT OF THE ADHESIVE TO THE SKIN MAY CAUSE IRRITATION TO THE CONTACT AREA.

SKIN ABSORPTION: NOT LIKELY TO BE ABSORBED.

INGESTION: NOT LIKELY BECAUSE OF THE PHYSICAL FORM.

INHALATION: NOT LIKELY BECAUSE OF PHYSICAL FORM, MECHANICAL SUFFOCATION POSSIBLE.

AVOID BREATHING FUMES DURING WELDING. ADHESIVE MAY EVOLVE HYDROCARBON, ESTER, CARBON DIOXIDE, AND CARBON MONOXIDE DURING HEATING AND OR COMBUSTION.

VENTILATION IS RECOMENDED TO MINIMIZE EXPOSURE TO FUME.

SYSTEMIC AND OTHER EFFECTS: NONE KNOWN.

SECTION 6 FIRST AID

EYE: MECHANICAL INJURY - STAIN FOR EVIDENCE OFCORNEAL INJURY. FLUSH EYES WITH RUNNING WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN: IF IRRITATION DEVELOPS WASH WITH MILD SOAP AND RUNNING WATER.

INGESTION: NO FIRST AID MEASURES NORMALLY REQUIRED.

INHALATION: MOVE INDIVIDUAL TO FRESH AIR.

SECTION 7 SPECIAL HANDLING INFORMATION

CLEANLINESS: KEEP WORK AREAS CLEAN. DISPOSE OF WASTE CLOSE TO WORK AREA TO AVOID UNNECESSARY HANDLING OF WASTE MATERIALS.

VENTILATION: DURING APPLICATION OF PRODUCT, GENERAL VENTILATION IS ADEQUATE. DURING WELDING USE LOCAL VENTILATION CONSISTENT WITH PROPER WELDING PRACTICE.

RESPIRATORY PROTECTION: USE GOOD GENERAL AND OR LOCAL VENTILATION. WHEN WELDING IN CONFINED AREAS AND WHERE LOCAL VENTILATION IS NOT ADEQUATE USE FUME OR AIR SUPPLIED RESPIRATOR.

PROTECTIVE CLOTHING: NONE USUALLY REQUIRED.

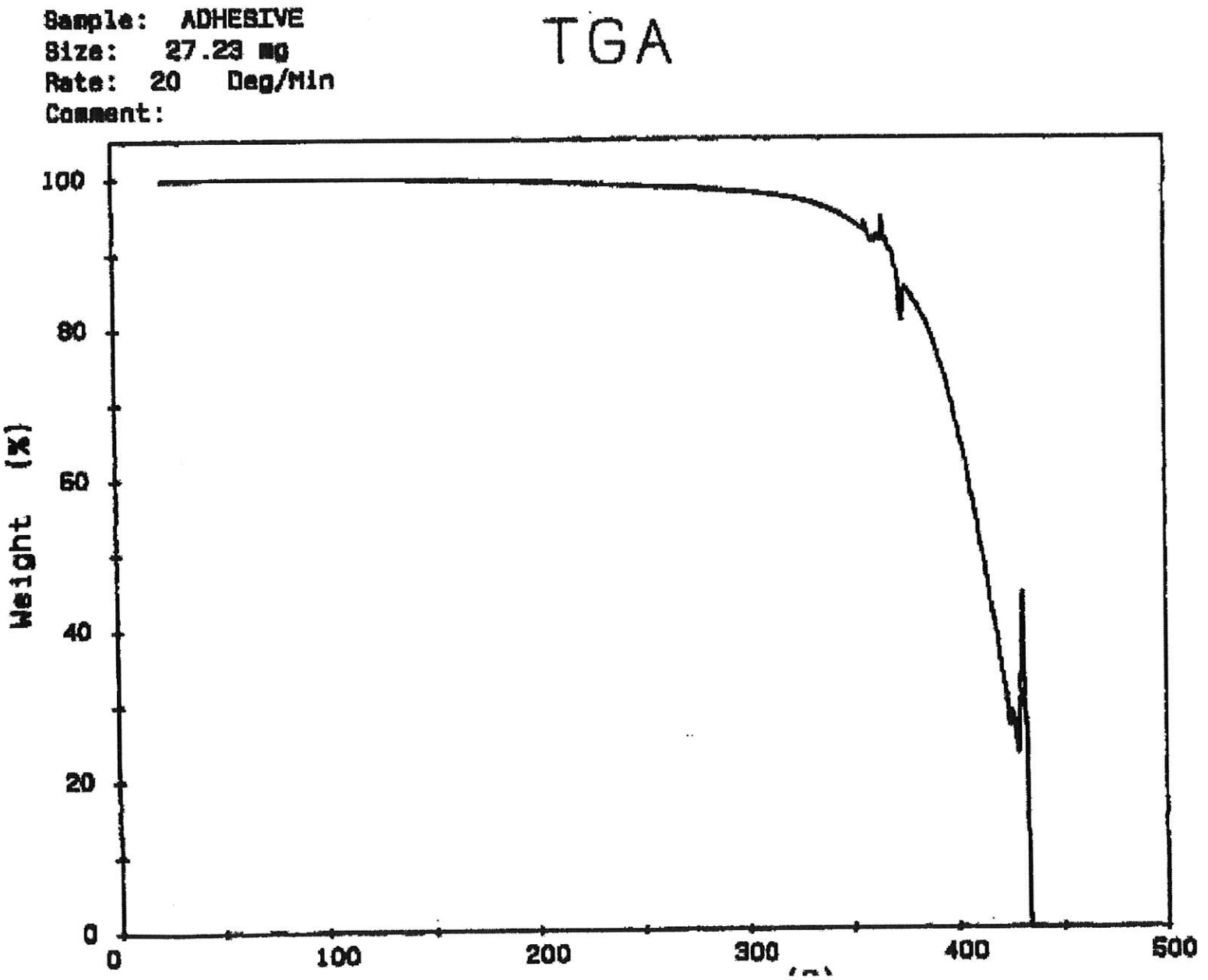
EYE PROTECTION: USUALLY NOT NECESSARY. SAFETY GLASSES WITHOUT SIDE SHIELDS ARE RECOMMENDED.

Re: Fume Analysis

Please find below a fume analysis on our adhesive foil. The by-product analysis is based on decomposition products evolved by slowly heating the adhesive foil over a broad temperature range and measuring the products evolved. This analysis is not based on actual welding. We believe that the by-products evolved in these tests exceed those which would be encountered under worst case welding conditions.

The adhesive is an acrylate based material and is considered halogen free. Under conditions where the adhesive does not exceed 300 deg. C., there is no significant by-product evolved. Above this temperature, carbon dioxide, carbon monoxide, esters and hydrocarbons begin to evolve as shown in figures 3, 18-21. Figure 22 shows the total ion chromatogram of decomposed products. The identities of the peaks were based on a database search or by inspection. Major components consist of acrylic esters, mono acid esters, diacid esters, 1-butanol, and 2- ethyl hexanol.

Figure 3


Sample: ADHESIVE
Size: 27.23 mg
Rate: 20 Deg/Min
Comment:
TGA
Weight (%)
100
80
60
40
20
0
0
100
200
300
400
500

Peak Area
0.0
4.0
8.0
12.
16.
0.0
50.
100
150
200
250
300
350
400
Temperature (C)
Hydrocarbon

Figure 18

Figure 19

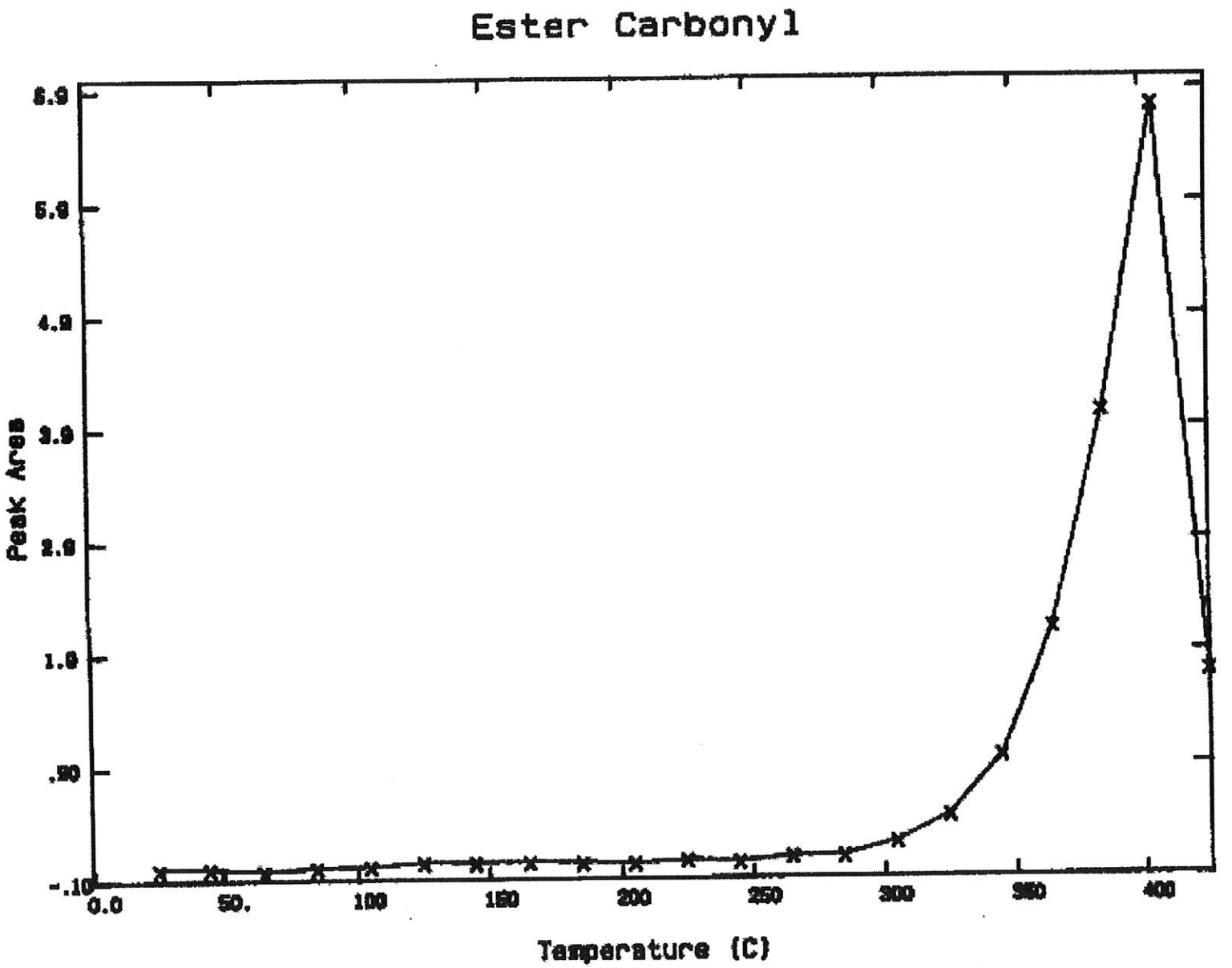

Ester Carbonyl
Peak Area
6.0
5.0
4.0
3.0
2.0
1.0
.00
-.10
0.0
50.
100
150
200
250
300
350
400
Temperature (C)

Figure 20

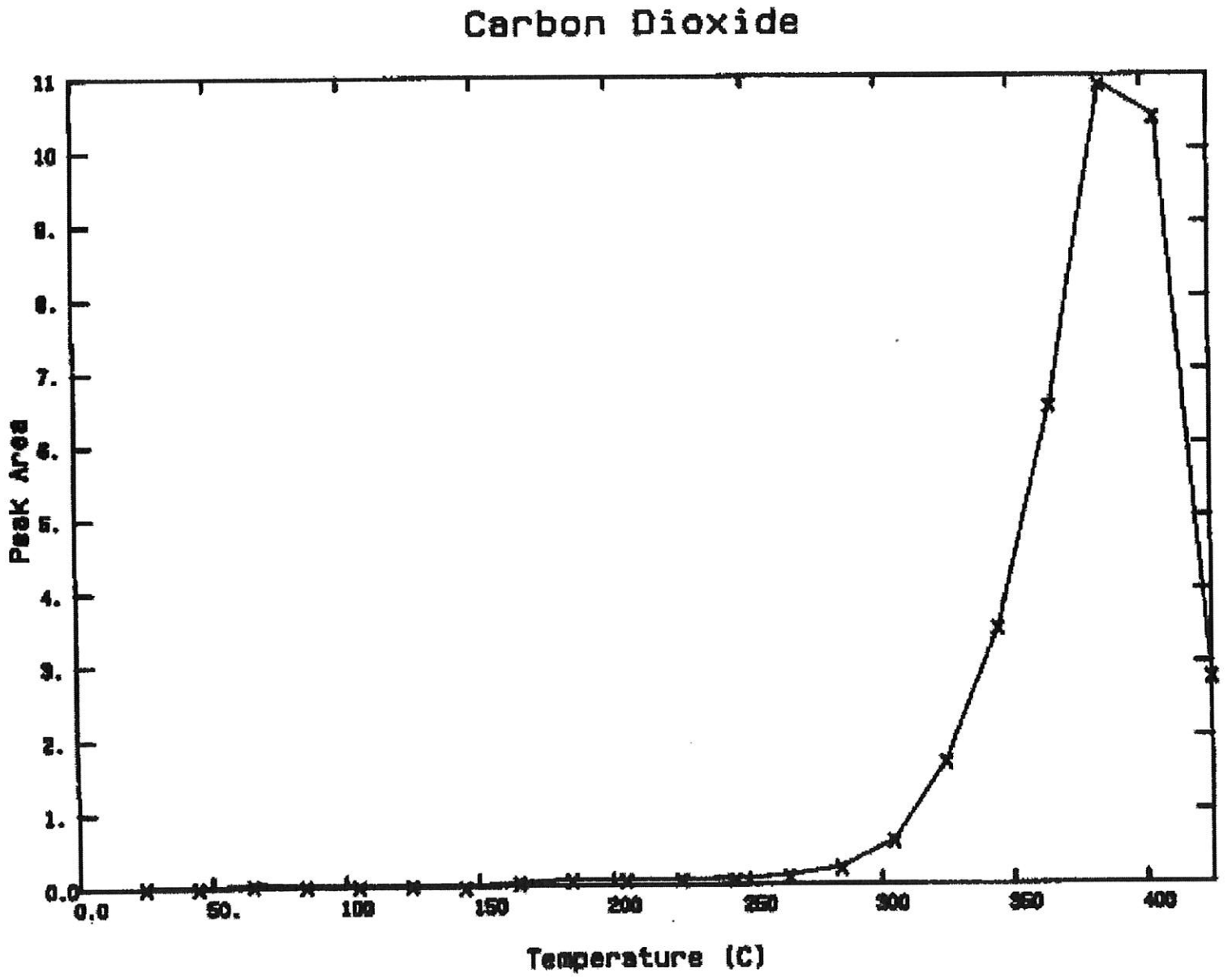

Carbon Dioxide
Peak Area
11
10
9.
8.
7.
6.
5.
4.
3.
2.
1.
0.0
0.0
50.
100
150
200
250
300
350
400
Temperature (C)

Figure 21

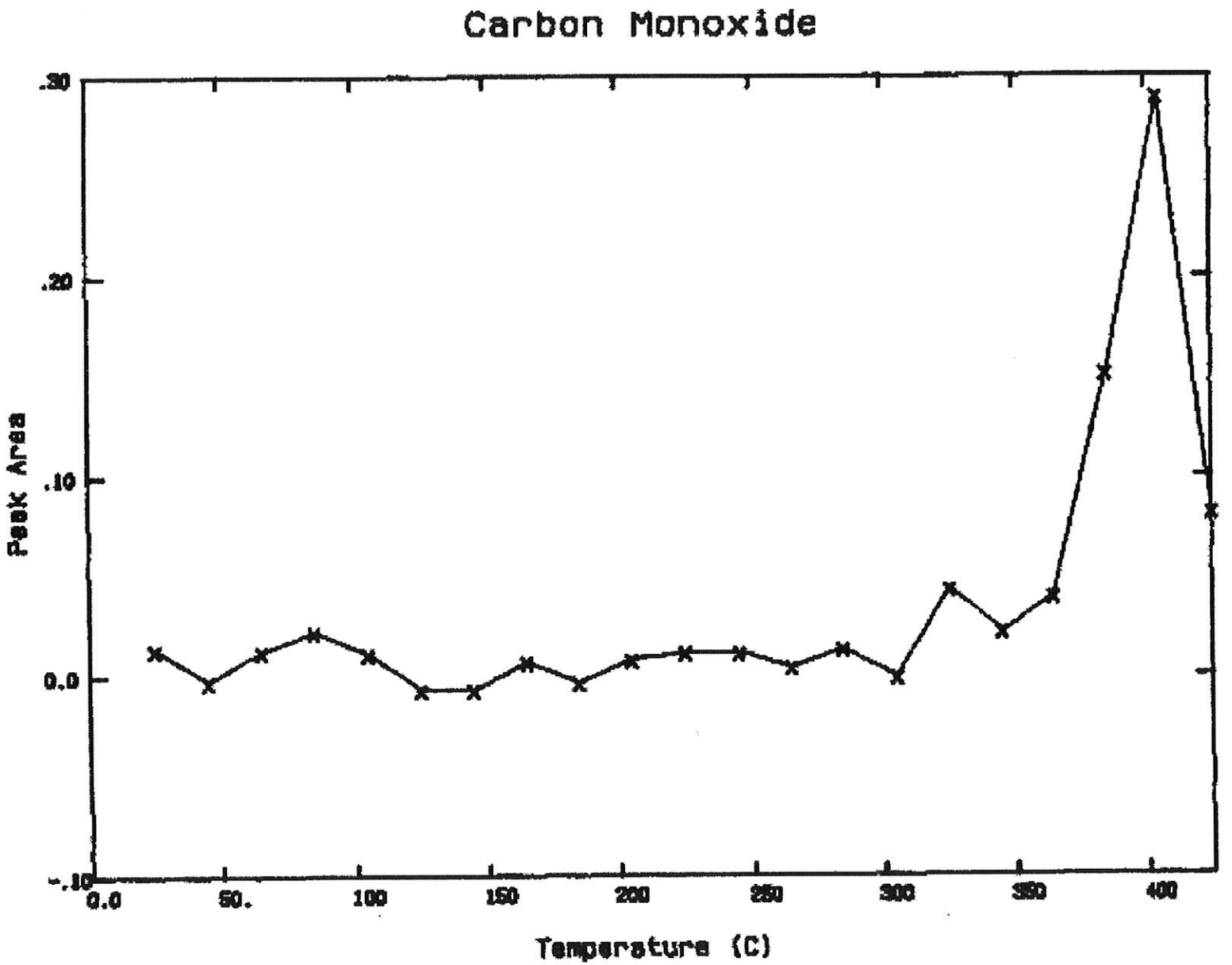
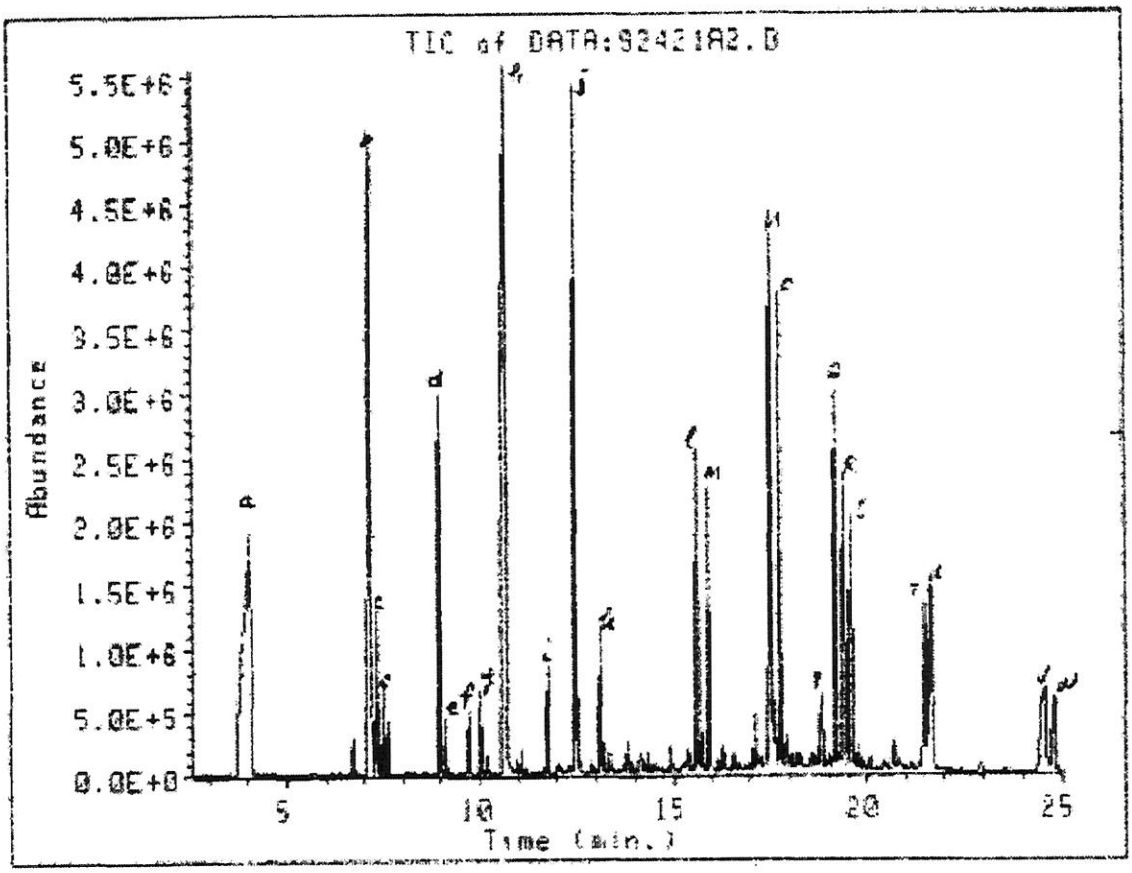

Carbon Monoxide
.30
.20
.10
0.0
-.10
Peak Area
0.0
50.
100
150
200
250
300
350
400
Temperature (C)

Figure 22



a	1-butanol
b	propenyl acrylate
c	isomer of b
d	butylacrylate
e	isobutyl propanoate
f	2,4,4 trimethyl-1-penten-3-ol
g	2-methyl hexyl acrylate
h	2-ethyl-1-hexanol
i	2-ethyl hexyl acetate
j	2-ethyl hexyl acrylate
k	2- methyl octyl acrylate
l	dibutyl pentanedioic acid ester
m	aidioc ester
n	dibutyl methyl-butanoate
o	diethyl 2-propenyl propandioate
p	a 2-propenyl propandioate ester
q	a *methyl butandioate ester*
r	a 2-propenyl propandioate ester