

EPA Evaluation of BG Supercharge Gasoline Treatment
Under Section 511 of the Motor Vehicle
Information and Cost Savings Act

by

John C. Shelton

September, 1981

Test and Evaluation Branch
Emission Control Technology Division
Office of Mobile Source Air Pollution Control
U.S. Environmental Protection Agency

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 610]

[FRL _____]

FUEL ECONOMY RETROFIT DEVICES

Announcement of Fuel Economy Gasoline Additive Evaluation
for "BG Supercharge Gasoline Treatment"

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Fuel Economy Retrofit Device Evaluation.

SUMMARY: This document announces the conclusions of the EPA evaluation of "BG Supercharge Gasoline Treatment" under provisions of Section 511 of the Motor Vehicle Information and Cost Savings Act.

BACKGROUND INFORMATION: Section 511(b)(1) and Section 511(c) of the Motor Vehicle Information and Cost Savings Act (15 U.S.C. 2011(b)) requires that:

(b)(1) "Upon application of any manufacturer of a retrofit device (or prototype thereof), upon the request of the Federal Trade Commission pursuant to subsection (a), or upon his own motion, the EPA Administrator shall evaluate, in accordance with rules prescribed under subsection (d), any retrofit device to determine whether the retrofit device increases fuel economy and to determine whether the representations (if any) made with respect to such retrofit devices are accurate."

(c) "The EPA Administrator shall publish in the Federal Register a summary of the results of all tests conducted under this section, together with the EPA Administrator's conclusions as to -

(1) the effect of any retrofit device on fuel economy;

(2) the effect of any such device on emissions of air pollutants; and

(3) any other information which the Administrator determines to be relevant in evaluating such device."

EPA published final regulations establishing procedures for conducting fuel economy retrofit device evaluations on March 23, 1979 [44 FR 17946].

ORIGIN OF REQUEST FOR EVALUATION: On March 31, 1981, the EPA received a request from Glasgow Industrial Distributing for evaluation of a fuel saving gasoline additive termed "BG Supercharge Gasoline Treatment". This additive is claimed to save fuel and reduce emissions.

Availability of Evaluation Report: An evaluation has been made and the results are described completely in a report entitled: "EPA Evaluation of BG Supercharge Gasoline Treatment Under Section 511 of the Motor Vehicle Information and Cost Savings Act," report number EPA-AA-TEB-511-81-19 consisting of 32 pages including all attachments.

Copies of this report may be obtained from the National Technical Information Service by using the above report number. Address requests to:

National Technical Information Service
U.S. Department of Commerce
Springfield, VA 22161
Phone: Commercial (703) 487-4650
FTS 737-4650

Summary of Evaluation

EPA fully considered all of the information submitted by the applicant. Actual test data was not submitted with this application. Sales literature was supplied which claimed improvements from 0.8% to 11.5% improvements in fuel economy. EPA experience with similar type gasoline additives does not support these claims.

Based on this information and EPA's experience with similar additives, there is no technical basis to support any claims for an improvement in fuel economy or reduction in exhaust emissions due to the use of "BG Supercharge Gasoline Treatment".

FOR FURTHER INFORMATION CONTACT: Merrill W. Korth, Emission Control Technology Division, Office of Mobile Source Air Pollution Control, Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan 48105, (313) 668-4299.

Date

Kathleen Bennett
Assistant Administrator
for Air, Noise, and Radiation

EPA Evaluation of BG Supercharge Gasoline Treatment Under Section 511 of the Motor Vehicle Information and Cost Savings Act

The following is a summary of the information on the additive as supplied by the Applicant and the resulting EPA analysis and conclusions.

1. Marketing Identification of the Device:

BG Supercharge Gasoline Treatment

2. Inventor of the Device and Patents:

A. Inventor

B. G. Products, Inc.
P.O. Box 11264
Wichita, Kansas 67211

B. Patent

No patent

3. Manufacturer of the Device:

B. G. Products, Inc.
P.O. Box 11264
Wichita, Kansas 67211

4. Manufacturing Organization Principals:

Don H. Walton - President
Edward J. Bash - Vice President
O. J. Connell - Vice President

5. Marketing Organization in U.S. making Application:

Glasgow Industrial Distributing
Distributor BG Products, Inc.
Fort Peck Route
Glasgow, Montana 59230

6. Applying Organization Principals:

Martin R. Connell, D.V.M
Contact: Dennis L. Garsjo, Sales Manager

7. Description of Device:

A. Purpose of the Device (as supplied by Applicant):

"Improve fuel economy on all motor vehicles."

B. Theory of Operation (as supplied by Applicant):

"BG Supercharge is a superior gasoline treatment which cleans the entire fuel system of gasoline engines. BG Supercharge chemically removes performance-robbing deposits from engines without the expense of an overhaul."

8. Applicability of the Device (as supplied by Applicant):

"Can be used in any gasoline engine."

9. Costs (as supplied by Applicant):

Not supplied.

10. Device Installation - Tools and Expertise Required (as supplied by Applicant):

"BG Supercharge Gasoline Treatment is added to gasoline at a ratio of one part BG Supercharge to four hundred parts gasoline."

"For quick clean-up in individual vehicle tanks, add on the basis of one 12 ounce can of BG SUPERCHARGEtm for each 10 gallons to 20 gallons of gasoline."

11. Device Operation (as supplied by Applicant):

"Same as number 10."

12. Maintenance (claimed):

"Same as number 10."

13. Effects on Vehicle Emissions (non-regulated) (claimed):

"Use of BG Supercharge helps control engine deposits and can result in reduced exhaust emissions in older cars and can prevent the formation of these deposits in new cars."

14. Effects on Vehicle Safety (claimed):

"Does not alter vehicle safety."

15. Test Results (Regulated Emissions and Fuel Economy) (submitted by Applicant):

The applicant stated "A Fuel Economy Improvement Test was conducted with nine cars each of four different U.S. models. These thirty-six were driven for 20,000 miles with a commercial gasoline which contained a carburetor detergent. These automobiles were then driven an additional 10,000 miles with the additive contained in BG SUPERCHARGEtm mixed with the gasoline. The miles per gallon improvement varied from 0.8% to 11.5%, with the dirtiest engines showing the greatest improvement. The average miles per gallon

improvement for all thirty-six cars was 3.6%; further proof that BG SUPERCHARGEtm helps improve engine performance and removes mileage reducing deposits." The applicant did not submit the actual test data to support the above claims.

16. Analysis

A. Description of the Additive:

This product appears to be a detergent type gasoline additive.

B. Applicability of the Additive:

It can be used in all gasoline engines.

C. Costs:

Not supplied.

D. Additive Installation - Tools and Expertise Required:

The additive is added to gasoline at a ratio of one part in four hundred parts of gasoline. The method of installation in individual vehicle tanks is reasonable.

E. Effects on Vehicle Emissions (non-regulated):

The effects on vehicle emissions is unknown. The applicant did not supply any test data.

F. Effects on Vehicle Safety:

The addition of this additive to the vehicles fuel supply should not affect the vehicle's safety.

G. Test Results Supplied by Applicant:

The applicant did not submit any test data in accordance with the Federal Test Procedure or the Highway Fuel Economy Test. The requirement for test data following these procedures is stated in the application test policy documents that EPA sends to potential

applicants*. The applicant stated in his original application that he would complete the testing upon request. He later decided not to conduct this testing.

17. Conclusions

EPA fully considered all of the information submitted by the applicant in his application. Based on the available information and EPA's previous experience with similar fuel additives, there is no technical basis to support any claims for an improvement in fuel economy.

* From EPA 511 Application test policy documents:

Test Results (Regulated Emissions and Fuel Economy):

Provide all test information which is available on the effects of the device on vehicle emissions and fuel economy.

The Federal Test Procedure (40 CFR Part 86) is the only test which is recognized by the U.S. Environmental Protection Agency for the evaluation of vehicle emissions. The Federal Test Procedure and the Highway Fuel Economy Test (40 CFR Part 600) are the only tests which are normally recognized by the U.S. EPA for evaluating vehicle fuel economy. Data which have been collected in accordance with other standardized fuel economy measuring procedures (e.g. Society of Automotive Engineers) are acceptable as supplemental data to the Federal Test Procedure and Highway Fuel Economy Test Data and will be used, if provided, in the preliminary evaluation of the device. Data are required from the test vehicle(s) in both baseline (all parameters set to manufacturer's specifications) and modified forms (with device installed).

List of Attachments

Attachment A	Letter, EPA to Mr. Garsjo, of Glasgow, March 9, 1981.
Attachemnt B	511 application from Mr. Garsjo to EPA, March 31, 1981.
Attachment C	Letter, EPA to Mr. Garsjo, June 30, 1981.
Attachment D	Letter, EPA to Mr. Garsjo, August 19, 1981.
Attachment E	Letter, Mr. Garsjo to EPA, August 24, 1981.
Attachment F	Letter, EPA to Mr. Garsjo, September 3, 1981.

March 9, 1981

Mr. Dennis Carsjo
Glasgo
Fort Peck Route
Glasgow, MT 59230

Dear Mr. Carsjo:

This letter is in response to your inquiry of 3/6/81, regarding an EPA evaluation of EC Products. The Environmental Protection Agency is charged by Congressional mandate to evaluate fuel economy and emission control devices. While the EPA does not actually "approve" such devices, it does conduct evaluations for the purpose of increasing the common knowledge in the area. For this reason, the outcome of any testing by EPA becomes public information. It is this information which may be cited although no claims can be made that any EPA findings constitute "approval" of the device or system.

Enclosed with this letter is a packet of materials which you will need to apply for an EPA evaluation of your device. This packet consists of 1) an application format, 2) a document entitled "EPA Retrofit and Emission Control Device Evaluation Test Policy" and 3) a copy of the applicable Federal Regulations.

In order for the EPA to conduct an evaluation of your device, we must have an application. Once you have reviewed all the documents in the packet, you should prepare an application in accordance with the guidelines of the application format. A critical part of the application is the substantiating test data. The required test results will have to be obtained at a laboratory of your choice. Such testing would be conducted at your expense. A list of laboratories which are known to have the equipment and personnel to perform acceptable tests has been included in the enclosed packet. If you desire, we can assist in the development of a satisfactory test plan.

Once we receive your application, it will be reviewed to determine if it meets the requirements listed in the format. If so, you will be advised of our decision whether or not EPA will perform any confirmatory testing. Any EPA testing will be performed at no cost to you, and you will be given the opportunity to concur with our test plan. Once this testing is complete, an evaluation report will be written solely on the basis of the test data submitted and our engineering analysis.

There are, however, several aspects concerning testing at an outside laboratory which I would like to bring to your attention at this time:

Minimum Test Requirements - Although different types of devices may require a more complex test plan, the minimum we require involves two vehicles and two test sequences run in duplicate. The vehicles should be selected from those listed in Table 1; if possible. Each vehicle is to be set to manufacturer's tune-up specifications for the baseline tests.

The tests are conducted in a "back-to-back" manner, once with the vehicle in baseline condition and again with the device installed with no vehicle adjustments between tests. If installation of the device also involves some adjustments, e.g. timing, fuel-air mixture, choke or idle speed, another test sequence with only these adjustments should be inserted between the first and last. Also as a minimum, the test sequence shall consist of a hot-start LA-4 portion (bags 1 and 2) of the Federal Test Procedure (FTP) and a Highway Fuel Economy Test (HFET). The details of these tests are contained in the enclosed packet. Although only a hot-start FTP is required to minimize the costs to you, you are encouraged to have the entire cold-start test performed since any testing and evaluation performed by EPA will be based on the complete FTP and you may wish to know how a vehicle with your device performs over this official test. As a final requirement, the personnel of the outside laboratory you select should perform every element of your test plan. This includes preparation of the test vehicle, adjustment of parameters and installation of the device.

Submission of Data - We require that all test data obtained from the outside laboratories in support of your application be submitted to us. This includes any results you have which were declared void or invalid by the laboratory. We also ask that you notify us of the laboratory you have chosen, when testing is scheduled to begin, what tests you have decided to conduct, allow us to maintain contact with the laboratory during the course of the testing, and allow the test laboratory to directly answer any questions at any time about the test program.

Cost of the Testing - The cost of the minimum test plan (two vehicles, two test sequences in duplicate) described above should be less than \$2000 per vehicle and less than \$4000 for the total test at any of the laboratories on the list. You will have to contact them individually to obtain their latest prices.

Outcome of the Tests - Although it is impossible to accurately predict the overall worth of a device from a small amount of testing, we have established some guidelines which will help you determine whether the test results with your device should be considered encouraging. These values have been chosen to assure both of us that a real difference in fuel economy exists and that we are not seeing only the variability in the results. The table below presents the minimum number of cars that need to be tested for varying degrees of fuel economy improvement assuming a typical amount of variability in fuel economy measurement.

For a minimum test plan which was conducted on a fleet of two cars, the average improvement should be at least 8%. If at least an 8% difference in average fuel economy can be shown, then we would be able to say statistically at the 80% confidence level that there is a real improvement.

Similarly, we would expect a minimum of 5% improvement for a fleet of 5 vehicles. Test results which display a significant increase in emission levels should be reason for concern.

Minimum Fuel Economy Improvements versus Size of Test Fleet

<u>Fleet Size</u>	<u>Average Improvement Required</u>
2	8%
3	7%
4	6%
5	5%
10	4%
25	2%

Once we receive your application, it will be reviewed to determine if it meets the requirements listed in the format. If your application is not complete, we will ask you to submit further information or data. After any missing information has been submitted, your application will be reconsidered and once it meets our requirements, you will be advised of our decision whether or not EPA will perform any confirmatory testing. Any EPA testing will be performed at no cost to you and you will be given the opportunity to concur with our test plan. Once this testing is complete, an evaluation report will be written. If no further testing is required, the report will be written solely on the basis of the test data submitted and our engineering analysis.

Despite the current backlog and increasing number of inquiries regarding fuel economy device evaluations, the EPA intends to process your application in as expeditious a manner as possible. We have established a goal of twelve weeks from the receipt of a complete application to the announcement of our report. The attainment of this objective requires very precise scheduling and we are depending on the applicant to respond promptly to any questions or to submit any requested data. Failure to respond in a timely manner will unduly delay the process. In the extreme case, we may consider lack of response as a withdrawal of the application.

I hope the information above and that contained in the enclosed documents will aid you in the preparation of an acceptable application for an EPA evaluation of your device. I will be your contact with EPA during this process and any subsequent EPA evaluation. My address is EPA, Motor Vehicle Emission Laboratory, 2500 Plymouth Road, Ann Arbor, Michigan, 48105. The telephone number is (313) 663-4200. Please contact me if you have any questions or require any further information.

Sincerely,

MW/C

Merrill W. North
Device Evaluation Coordinator
Test and Evaluation Branch



March 31, 1981

EPA
Motor Vehicle Emission Laboratory
2565 Plymouth Road
Ann Arbor, Michigan 48105

Attn: Merrill W. Korth
Device Evaluation Coordinator
Test & Evaluation Branch

Dear Mr. Korth,

Enclosed is my number one Preliminary Application.

Please let me know what the next step is.

Thank you

Sincerely,

Dennis L. Garsjo, Sales Manager
Glasgow Industrial Distributing
Distributor, BG Products, Inc.
Fort Peck Route
Glasgow, MT 59230

DLG/dra

Enc1

OFFICE

Fort Peck Route
Glasgow, Montana 59230
(406) 228-9313

BRANCHES

Glasgow Veterinary Supply
P.O. Box 2366 Hwy. 87 North
Great Falls, Montana 59403
(406) 727-3613

Glasgow Miles City
Industrial Park
P.O. Box 67
Miles City, Montana 59301
(406) 232-6868

Glasgow Belgrade
Route 2, Box 469A
Jackrabbit Lane
Belgrade, Montana 59714
(406) 388-4742

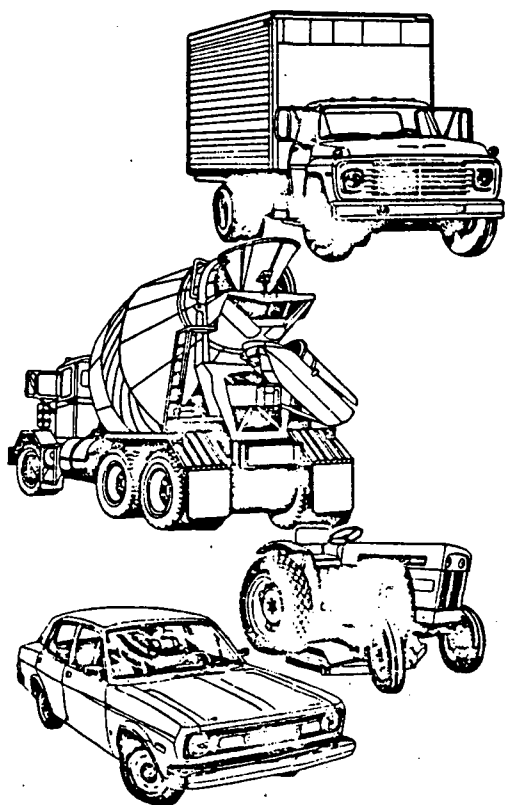
Glasgow Kalispell
Box 1499
3239 Hwy. 93 S.
Kalispell, Montana 59901
(406) 755-8555

1. Application for Evaluation of a Fuel Economy Retrofit Device Under Section 511 of the Motor Vehicle Information and Cost Savings Act
2. Marketing Identification of the Device:
 - BG Extreme Pressure Concentrate
 - BG Motor Oil Additive
 - BG Supercharge Gasoline Treatment
3. Identification of Inventor and/or Patent Protection:
 - a-BG Products, Inc.
 - P.O. Box 11264
 - Wichita, Kansas 67211
 - b-No Patent - Product information attachment 1, 2, & 3 enclosed
4. Identification of Device Manufacturers:
 - BG Products, Inc.
 - P.O. Box 11264
 - Wichita, Kansas 67211
5. Identification of Manufacturing Organization's Principals:
 - Don H. Walton, President
 - Edward J. Bash, Vice President
 - O. J. Connell, Vice President
6. Identification of Organization Making Application:
 - Glasgow Industrial Distributing
 - Distributor BG Products, Inc.
 - Fort Peck Route
 - Glasgow, Montana 59230
7. Identification of Applying Organization's Principals:
 - Martin R. Connell, D.V.M.
 - Contact: Dennis L. Garsjo, Sales Manager
8. Description of Device:
 - a-Improve fuel economy on all motor vehicles
 - b-Exhibit 1, 2, & 3
 - c-Exhibit 1, 2, & 3
9. Applicability of the Device:
 - Can be used in any gasoline engine and is compatible with all petroleum based oils and gear lubricants.
 - Products are marketed in quantities from six ounces to fifty three gallon containers.
10. Device Installation:
 - BG Extreme Pressure Concentrate is added at regular service intervals at a ratio of one part BG E.P.C. to eight parts gear lubricant.
 - BG Motor Oil Additive is added at each oil change at a ratio of one part BG M.O.A. to fifteen parts motor oil.

10. Device Installation: (continued)
BG Supercharge Gasoline Treatment is added to gasoline at a ratio of one part BG Supercharge to four hundred parts gasoline.
11. Device Operation:
Same as number 10
12. Device Maintenance:
Same as number 10
13. Effects on Vehicle Emissions (non-regulated):
Exhibits 4, 5, 6, & 7
14. Effects on Vehicle Safety:
Does not alter vehicle safety
15. Test Results (Regulated Emissions and Fuel Economy):
To be completed upon request



SUPERCHARGETM GASOLINE TREATMENT



BG SUPERCHARGETM is a superior gasoline treatment which cleans the entire fuel system of gasoline engines. Use of **BG SUPERCHARGETM** helps control engine deposits and can result in reduced exhaust emissions in older cars and can prevent the formation of these deposits in new cars.

Harmful engine deposits of carbon, gum, varnish, and acids are problems inherent to internal combustion engines. Because these deposit formations affect the carburetor, intake manifold, plugs, valves, pistons, and PCV valve, the engine is unable to reach peak performance.

Most of the areas affected by these deposits are inaccessible to a mechanic without dismantling the engine. **BG SUPERCHARGETM** chemically removes these performance robbing deposits from your engine without the expense of an overhaul.

BG SUPERCHARGETM working in the fuel system and throughout the entire engine has proven superiority in carburetor clean-up and in reduced engine deposits. Engine manufacturer's severe sequence test results show **BG SUPERCHARGETM** improves engine performance even when the engine is lubricated with high quality oil.

A Fuel Economy Improvement Test was conducted with nine cars each of four different U.S. models. These thirty-six cars were driven for 20,000 miles with a commercial gasoline which contained a carburetor detergent. These automobiles were then driven an additional 10,000 miles with the additive contained in **BG SUPERCHARGETM** mixed with the gasoline. The miles per gallon improvement varied from 0.8% to 11.5%, with the dirtiest engines showing the greatest improvement. The average miles per gallon improvement for all thirty-six cars was 3.6%; further proof that **BG SUPERCHARGETM** helps improve engine performance and removes mileage reducing deposits.

BG SUPERCHARGETM cleans fuel injectors and nozzles and restores injector spray pattern, assuring proper combustion and fuel economy.

BG SUPERCHARGETM —

- Cleans emission control devices and keeps them clean.
- Cleans carburetor, intake valves, and valve stems.
- Keeps fuel tank and carburetor free of gums and resins.
- Controls deposits on spark plugs, pistons, valves, lifters, oil screens, and other engine parts.
- Is satisfactory for use in engines requiring Non-Leaded Fuel.
- Is recommended for any type of fuel injection system.
- Non-Corrosive to all types of metals.
- Non-Injurious to all types of materials used in carburetors and fuel systems.

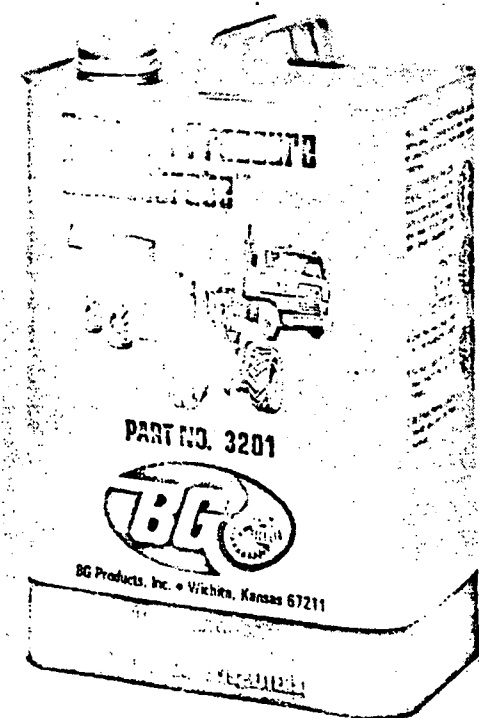
NON-HARMFUL TO CATALYTIC EXHAUST SYSTEMS WHEN USED AS DIRECTED

DIRECTIONS FOR USE

For quick clean-up in individual vehicle tanks, add on the basis of one 12 ounce can (.355 liter) of **BG SUPERCHARGETM** for each 10 gallons (38.85 liters) to 20 gallons (75.71 liters) of gasoline. Continued use provides best results.



EXTREME PRESSURE CONCENTRATE^{T.M.}



BG EXTREME PRESSURE CONCENTRATE FOR FARM AND INDUSTRY is an oil soluble, heat stable formula which increases delivered power, increases equipment life and ease of operation, and decreases wear. Even the smoothest metal finish is pitted and rough looking when viewed under a microscope. This surface roughness can result in rapid wear and eventual parts failure. **BG EXTREME PRESSURE CONCENTRATE FOR FARM AND INDUSTRY** contains agents which have the effect of smoothing and sealing metals under frictional conditions while reducing noise in gears and bearings, smoothing and quieting noisy hydraulic systems and improving shifting and power steering. **BG EXTREME PRESSURE CONCENTRATE FOR FARM AND INDUSTRY** will aid in reducing frictional heat, conditions seals, aids in stopping seal leaks, aids in prevention of corrosion and acid damage on bearing surfaces, reduces fuel consumption by increasing delivered power, and helps lubrication during cold starting conditions.

DIRECTIONS FOR USE

ALL TYPES OF TRANSMISSIONS, TORQUE CONVERTERS, AND HYDRAULIC SYSTEMS: Add to lubricant in the following proportions — Initial Treatment: 2 oz. (0.59 liters) per pint (.473 liters) or pound (453.6 g). Subsequent Treatment: 1 oz. (.0296 liters) per pint (.473 liters) or pound (453.6 g) every 500 hours and/or when changing lubricant.

DIFFERENTIAL AND FINAL DRIVE: 2 oz. (.059 liters) per pint (.473 liters) or pound (453.6 g) every 500 hours and/or when changing lubricant.

CHASSIS: Grease fittings and wheel bearings — mix thoroughly with lubricant as follows — 2 oz. (.059 liters) to the pint (.473 liters) or pound (453.6 g).

BG EXTREME PRESSURE CONCENTRATE FOR FARM AND INDUSTRY SHOWS EXCELLENT COMPATIBILITY WITH PETROLEUM BASE OILS AND WILL NOT SETTLE OUT OF OILS OR GREASES WHEN THOROUGHLY BLENDED.

CAUTION: MAY CAUSE EYE IRRITATION. AVOID EYE CONTACT. IF PRODUCT GETS IN EYES, FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION AT ONCE.

KEEP OUT OF REACH OF CHILDREN

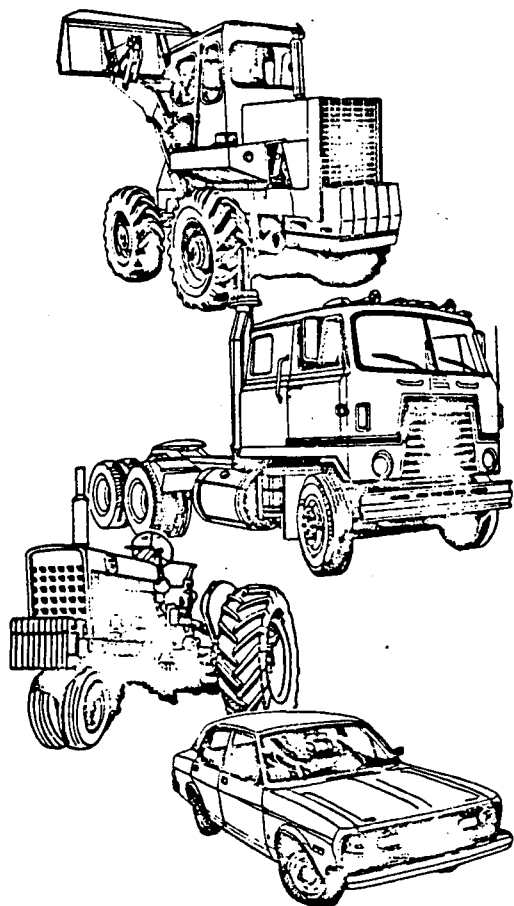
SPECIFICATIONS

Viscosity @210 F., SUS	120-130
Viscosity @100 F., SUS	800-1100
Density	0.929
Pounds Per Gallon (U.S. Liquid)	7.735
Color	Dark Amber
Flash Point, F., Minimum	350
Pour Point, F., Maximum	0
Copper Corrosion, Maximum, (ASTM D-130)	1
Shell Four-Ball E.P.	
Load Wear Index	68
Weld Point, Kg.	400
Timken O.K. Test Load, #	60



PRODUCT INFORMATION

Motor Oil Additive



SPECIFICATIONS

Viscosity @ 210°F. SUS	60-70
Viscosity @ 100°C. cs	10.0-12.6
Viscosity @ 100°F. SUS	300-500
Viscosity @ 40°C. cs	58.9-97.7
Viscosity Index, Minimum	130
Flash Point, °F.	350 Minimum
Flash Point, °C.	177 Minimum

BG MOTOR OIL ADDITIVE is an oil-soluble, heat-stable formula which provides improved engine performance, less engine parts wear, easier operation, and longer equipment life. Most modern, high quality motor oils contain additives that are designed to protect against the formation of engine deposits, rust and corrosion, and engine parts wear. These additives gradually deplete themselves through normal engine operation which can result in oil oxidation or thickening. BG MOTOR OIL ADDITIVE improves a quality motor oil's ability to provide the desired protection and performance characteristics.

A Sequence IIC Test (a standard industry accepted measurement of a motor oil's performance under severe operating conditions) was conducted at the facilities of a leading independent testing laboratory to determine any advantages which might result from using BG MOTOR OIL ADDITIVE in an API Service Classification "SE" motor oil.

The results of the tests show that use of BG MOTOR OIL ADDITIVE affords greater engine protection against the formation of sludge and varnish deposits than the protection provided by a high quality "SE" motor oil without the benefits of BG MOTOR OIL ADDITIVE. The tests also concluded that the viscosity increase data indicated use of BG MOTOR OIL ADDITIVE offered improved high temperature oxidation inhibition. BG MOTOR OIL ADDITIVE can help reduce oil consumption and engine parts wear, smooth and seal metals under frictional conditions, and reduce friction between internal parts.

DIRECTIONS FOR USE:

For continued engine protection use as follows: Use at the ratio of 1 gallon (3.792 liters) Motor Oil Additive to each 15 gallons (56.88 liters) (or 11 ozs. to 5 qts.) of Motor Oil at each oil change or every 150 hours of operation.

Motor Oil Additive can be added to crankcase anytime the oil level is low to fortify the motor oil and to improve lubrication. **DO NOT OVERFILL CRANKCASE!**

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.
BG Products, Inc.		(316) 265-2686 & 265-3111
ADDRESS (Number, Street, City, State, and ZIP Code)		
424 S. Greenwood (P.O. Box 11264) Wichita, Kansas 67211		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS
N. A.		BG EPC #320, Code 766
CHEMICAL FAMILY	FORMULA	
Hydrocarbon	N.A.	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
This material is essentially lubricating oils with extreme pressure and antiwear agents. It is not believed to be a hazardous material by U. S. Department of Labor definition, * and would not require a warning label as specified in the Hazardous Substance Act. **					

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	Unknown	SPECIFIC GRAVITY (H ₂ O=1)	0.9
VAPOR PRESSURE (mm Hg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	Slight
VAPOR DENSITY (AIR=1)	Unknown	EVAPORATION RATE (_____ =1)	Unknown
SOLUBILITY IN WATER	Slight		
APPEARANCE AND ODOR Dark amber lube oil			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	300° F. C.O.C.	FLAMMABLE LIMITS	Lel	Uel
		Unknown		
EXTINGUISHING MEDIA CO ₂ , foam, dry chemical				
SPECIAL FIRE FIGHTING PROCEDURES Do not direct water directly into fire.				
UNUSUAL FIRE AND EXPLOSION HAZARDS None				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

Unknown

EFFECTS OF OVEREXPOSURE

Irritation and redness to eyes

EMERGENCY AND FIRST AID PROCEDURES

Wash eyes with water or eyewash

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (Materials to avoid)

None

HAZARDOUS DECOMPOSITION PRODUCTS

Dense black smoke, CO, CO₂

HAZARDOUS
POLYMERIZATION

MAY OCCUR

CONDITIONS TO AVOID

WILL NOT OCCUR

X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Absorb with floor sweep and shovel up excess and scrape and sweep remainder.

WASTE DISPOSAL METHOD

Controlled burning if allowed by Federal, State, and local laws. Used lube oils are recycleable through rerefining processes.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

None

VENTILATION

LOCAL EXHAUST

SPECIAL

MECHANICAL (General)

OTHER

None

PROTECTIVE GLOVES

None

EYE PROTECTION

Sufficient to avoid direct contact,

OTHER PROTECTIVE EQUIPMENT

None

SECTION IX - SPECIAL PRECAUTIONS

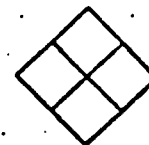
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store away from high heat and open flames.

OTHER PRECAUTIONS

Product should be used only for the purpose for which it was intended.

MATERIAL SAFETY DATA SHEET



SECTION I

PRODUCT MOTOR OIL ADDITIVE

MANUFACTURING DIVISION OR SUBSIDIARY <u>BG PRODUCTS, INC.</u>		EMERGENCY TELEPHONE MANUFACTURER <u>316</u> , <u>265-2686</u>
ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE) <u>P. O. BOX 11264 WICHITA, KANSAS 67211</u>		CHEM TREC 1-(800) 424-9300
CHEMICAL NAME OR FAMILY <u>Hydrocarbon</u>	FORMULA <u>N.A.</u>	

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

BOILING PT. _____°C (_____)°F	VAPOR PRESSURE (mmHg at 20°C)	VAPOR DENSITY (AIR = 1)	SPECIFIED GRAVITY (H ₂ O = 1)
MELTING PT. _____°C (_____)°F			
EVAPORATION RATE (_____) = 1	SOLUBILITY IN H ₂ O AT _____°C	PERCENT VOLATILE (BY WT. %)	STRONG ACID <input type="checkbox"/>
			STRONG BASE <input type="checkbox"/>
PHYSICAL FORM AND ODOR <u>Red Lubricating Oil</u>			STABLE <input checked="" type="checkbox"/>
			UNSTABLE <input type="checkbox"/>
HAZARDOUS DECOMPOSITION PRODUCTS <u>Dense Black Smoke, CO, CO₂</u>			
INCOMPATIBILITY (KEEP AWAY FROM) <u>None</u>			
LIST ALL TOXIC AND HAZARDOUS INGREDIENTS			

SECTION III - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD USED) <u>177°C 350°F</u>	FLAMMABLE LIMITS % LOWER _____ UPPER _____ <u>Unknown</u>
EXTINGUISHING AGENTS <input checked="" type="checkbox"/> DRYCHEMICAL <input checked="" type="checkbox"/> CO ₂ <input type="checkbox"/> WATERSPRAY <u>Foam</u>	
SPECIAL FIRE FIGHTING PROCEDURES <u>Do not direct water directly into fire.</u>	
UNUSUAL FIRE AND EXPLOSION HAZARDS <u>None</u>	

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR) <u>Unknown</u>	EFFECTS OF OVEREXPOSURE <u>Irritation and redness to eyes.</u>
TOXICOLOGICAL PROPERTIES <u>Unknown</u>	
EMERGENCY FIRST AID PROCEDURES	
EYES <u>Wash eyes with water or eyewash.</u>	
SKIN CONTACT	
INHALATION	
IF SWALLOWED	

MATERIAL SAFETY DATA SHEET

Page 2 of 2

SECTION V - SPECIAL PROTECTION INFORMATION

PRODUCT MOTOR OIL ADDITIVE

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL) <u>None</u>	
RESPIRATORY PROTECTION (SPECIFY TYPE) <u>None</u>	
PROTECTIVE GLOVES <u>None</u>	EYE PROTECTION <u>Sufficient to avoid direct contact.</u>
OTHER PROTECTIVE EQUIPMENT <u>None</u>	

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP <u>Remove all sources of ignition. Absorb with floor sweep and shovel up excess and scrape and sweep remainder.</u>
WASTE DISPOSAL <u>Controlled burning if allowed by Federal, State, and local laws. Used lube oils are recyclable through re-refining processes.</u>

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE <u>Store away from high heat and open flames.</u>
--

SECTION VIII - TRANSPORTATION DATA

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS	<input type="checkbox"/> UNREGULATED BY D.O.T.
LABEL REQUIRED	
U.S. D.O.T. PROPER SHIPPING NAME <u>Petroleum Oil N.O.S. 173, 118</u>	
TRANSPORTATION EMERGENCY INFORMATION <u>CHEM TREC 1-(800) 424-9300</u>	

SECTION IX - COMMENTS

<u>Product should be used only for the purpose for which it was intended.</u>

SIGNATURE <u>Terry H. Smith</u> TERRY H. SMITH	TITLE <u>Manager, Total Quality Assurance</u>
REVISION DATE _____	DATE SENT <u>8/2/79</u>

The information contained herein is based on data considered accurate. However, no warranty, expressed or implied, is given regarding the accuracy of these data or the results to be obtained from the use thereof.



MATERIAL SAFETY DATA SHEET

Page 2 of 2

SECTION V - SPECIAL PROTECTION INFORMATION

PRODUCT **BG Supercharge No. 20**
Code 785

VENTILATION TYPE REQUIRED (LOCAL, MECHANICAL, SPECIAL)

None

RESPIRATORY PROTECTION (SPECIFY TYPE)

None

PROTECTIVE GLOVES

None

EYE PROTECTION

Sufficient to avoid direct contact

OTHER PROTECTIVE EQUIPMENT

None

SECTION VI - HANDLING OF SPILLS OR LEAKS

PROCEDURES FOR CLEAN-UP

Remove all sources of ignition. Absorb with floor sweep and shovel up excess and scrape and sweep remainder.

WASTE DISPOSAL

Controlled burning if allowed by Federal, State, and local laws. Used lube oils are recycleable through re-refining processes.

SECTION VII - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store away from high heat and open flames.

SECTION VIII - TRANSPORTATION DATA

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS

Non-hazardous

☐ UNREGULATED BY D.O.T.

LABEL REQUIRED

None

U.S. D.O.T. PROPER SHIPPING NAME

Petroleum Oil N.O.S. 173,118

TRANSPORTATION EMERGENCY INFORMATION

CHEM TREC 1-(800) 424-9300

SECTION IX - COMMENTS

Product should be used only for the purpose for which it was intended.

SIGNATURE

Jon W. Smith
Jon W. Smith

TITLE Quality Control Supervisor,
Plants I & II

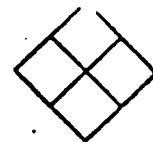
REVISION DATE

DATE SENT



RECEIVED MAY 1 1979

MATERIAL SAFETY DATA SHEET



SECTION I

PRODUCT BG Supercharge No. 200, Code 785

WITCO MANUFACTURING DIVISION OR SUBSIDIARY Southwest Petro-Chem, Inc. (Wichita)		EMERGENCY TELEPHONE MANUFACTURER 316-265-3111
ADDRESS (NUMBER, STREET, CITY, STATE, ZIP CODE) 220 West Waterman - Wichita, Kansas, 67202		CHEM TREC 1-(800) 424-9300
CHEMICAL NAME OR FAMILY Hydrocarbon	FORMULA N. A.	

SECTION II - CHEMICAL AND PHYSICAL PROPERTIES

BOILING PT. Unknown _____°C (_____°F)	VAPOR PRESSURE (mmHg at 20°C) Unknown	VAPOR DENSITY (AIR = 1) Unknown	SPECIFIED GRAVITY (H ₂ O = 1) 0.9
MELTING PT. _____°C (_____°F)			
EVAPORATION RATE (_____ = 1) Unknown	SOLUBILITY IN H ₂ O AT _____°C Slight	PERCENT VOLATILE (BY WT. %) Slight	STRONG ACID <input type="checkbox"/> STRONG BASE <input type="checkbox"/>
PHYSICAL FORM AND ODOR Amber lube oil with solvent odor			STABLE <input checked="" type="checkbox"/> UNSTABLE <input type="checkbox"/>
HAZARDOUS DECOMPOSITION PRODUCTS Dense black smoke, CO, CO₂			
INCOMPATIBILITY (KEEP AWAY FROM) None			
LIST ALL TOXIC AND HAZARDOUS INGREDIENTS This material is essentially lubricating oils with detergents and petroleum distillates. It is not believed to be a hazardous material by U.S. Department of Labor definition.			

SECTION III - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD USED) _____°C 112°F C.O.C.	FLAMMABLE LIMITS % LOWER _____ UPPER Unknown
EXTINGUISHING AGENTS <input checked="" type="checkbox"/> DRYCHEMICAL <input checked="" type="checkbox"/> CO, <input type="checkbox"/> WATERSPRAY Foam	
SPECIAL FIRE FIGHTING PROCEDURES Do not direct water directly into fire.	
UNUSUAL FIRE AND EXPLOSION HAZARDS None	

SECTION IV - HEALTH HAZARD DATA

PERMISSIBLE CONCENTRATIONS (AIR) Unknown	EFFECTS OF OVEREXPOSURE Irritation and redness to eyes
TOXICOLOGICAL PROPERTIES Unknown	
EMERGENCY FIRST AID PROCEDURES EYES Wash eyes with water or eyewash SKIN CONTACT INHALATION IF SWALLOWED	

RICHARD J. FAY AND ASSOCIATES, INC.
CONSULTING ENGINEERS
516 ACOMA STREET
DENVER, COLORADO 80204

REPORT

(303) 623-1509

RICHARD J. FAY
REX E. PAULSEN

JOHN M. FREEMAN, JR.
JACK N. GROMER
ROGER H. MAGUIRE
BRUCE E. BIRZA
BOB D. SCHLIEM
MARK J. FELLING
GREG W. MCILVAIN

Mr. Dennis Garsjo
Glasgo-BG
Fort Peck Route
Glasgow, Montana 59230

SUBJECT: Oil Analysis for PCB or Contaminates
REFERENCE: Our File No: 81-94
DATED: March 25, 1981
PREPARED BY: Bruce E. Birza, Senior Lab Technician

INTRODUCTION: A natural gas transmission system is concerned about their transmission gas lines becoming contaminated by compressor cylinder oil. We were engaged to analyze a "BG Motor Oil Additive" for PCB or other known contaminants.

CHEMICAL ANALYSIS RESULT:

The "BG Motor Oil Additive" sample was tested for Polychlorinated Biphenyls (PCB) and other chlorinated hydrocarbons using "Gas Chromatographic" techniques. This Gas Chromatograph instrument will detect PCB above 5 parts per million (ppm).

EPA consider oils which have less than 50 ppm not harmful and may be used for any function. 5 ppm is 1/10 of the permissible limit. In the sample oil tested, no PCB or other chlorinated hydrocarbons were detected.

Respectfully submitted,

Bruce E Birza
Bruce E. Birza
Senior Technician

June 30, 1981

Mr. Dennis L. Garsjo, Sales Manager
Glasgow Industrial Distributing
Distributor, EG Products, Inc.
Fort Peck Route
Glasgow, MT 59230

Dear Mr. Garsjo:

We have reviewed your application for an EPA evaluation of EG Products, which include, EG Extreme Pressure Concentrate, EG Motor Oil Additive, and EG Supercharge Gasoline Treatment. This letter is intended to provide direction in proceeding through the evaluation process.

Your gasoline additive will be evaluated according to Section 511 process as described in the documents enclosed with my letter to you dated March 9, 1981. I am enclosing the latest list of EPA recognized independent laboratories so that you may make arrangements to obtain the required data on this product. We would like to comment on your test plan before testing begins.

EPA has been involved over the past two years in the development of test procedures for low friction engine lubricants including serving on the technical committee that is developing the ASTM procedure. Since there are several companies with product lines similar to yours, EPA has received numerous suggestions as to the manner in which low friction lubricants should be evaluated. Our policy is firming up as follows:

1. Motor vehicle oils and lubricants do not fall under the provisions of Section 511 of the Motor Vehicle Information and Cost Savings Act. However, EPA is prepared to work with EG Products and to evaluate your products using the same procedures and protocols defined in the documents I mailed to you on March 9, 1981. The results will be published in the form of a technical report and no Section 511 report or Federal Register notice will be prepared as done in normal Section 511 evaluations.
2. The data requirements from independent laboratories and the test procedures used will be the same as for a normal Section 511 evaluation (see EPA letter to EG Products dated March 9, 1981). EPA would like to comment on your test plan for independent lab testing, before the tests are performed.
3. Each product must be evaluated individually. Grouping of several products in the same test series (such as engine, transmission, differential, and wheel bearing lubricants) will not separate individual effects and will not produce reliable information on effectiveness for the consumer. Grouping will be permitted only if the multiple products are to be advertised, sold, and used as a complete integral package.

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OFFICE OF
AIR AND WASTE MANAGEMENT

August 19, 1981

Mr. Dennis Garsjo
Glasgow Industrial Distributing
Fort Peck Route
Glasgow, MT 59230

Dear Mr. Garsjo:

In my letter to you of June 30, I described the procedure for pursuing an EPA evaluation of BG Supercharge Gasoline Treatment under Section 511 of the Motor Vehicle Information and Cost Savings Act. I also explained how we could evaluate BG Motor Oil Additive, even though it is outside the scope of the Act. In that letter, I offered to assist you in your efforts to conduct preliminary testing at an independent laboratory which is "recognized" by EPA.

Since that time, we have not heard from you. In order to conduct our evaluations on a timely basis, we must establish a schedule for each one. Please contact me by August 31 if you wish to pursue evaluations of BG Supercharge Gasoline Treatment and/or BG Motor Oil Additive. In this case, we will expect your draft test plan by September 14 and the results of testing at an recognized laboratory by October 26.

If we do not hear from you by August 31, we will prepare our Section 511 evaluation of BG Supercharge Gasoline Treatment based on the information we have. We will take no further action on the other BG additives. Please contact me immediately if you have any questions or require further information. My telephone number is (313) 668-4299.

Sincerely,

Merrill W. Korth

Merrill W. Korth, Device Evaluation Coordinator
Test and Evaluation Branch



August 24, 1981

Merrill W. Korth
Device Evaluation Co-Ordinator
United States Environmental Protection Agency
Ann Arbor, MI 48105

Dear Mr. Korth,

In answer to your letter of August 19, 1981, Glasgow Industrial Distributing hereby requests that you withdraw our application to test BG Supercharge Gasoline Treatment and BG Motor Oil Additive until we are able to submit the proper information for such an evaluation.

Due to economic conditions we have not retained one of the approved laboratories to conduct the preliminary test. We will submit a new application when we are ready to have one of them proceed.

Thank you for your time and consideration.

Sincerely,

Dennis L. Garsjo, President
Glasgo BG

DLG/dra

HOME OFFICE

Fort Peck Route
Glasgow, Montana 59230
(406) 228-9313

BRANCHES

Glasgow Veterinary Supply
P.O. Box 2366 Hwy. 87 North
Great Falls, Montana 59403
(406) 727-3613

Glasgo of Miles City
Industrial Park
P.O. Box 67
Miles City, Montana 59301
(406) 232-6868

Glasgo of Belgrade
Route 2, Box 459A
Jackrabbit Lane
Belgrade, Montana 59714
(406) 388-4742

Glasgo of Kalispell
Box 1499
3239 Hwy. 93 S
Kalispell, Montana 59901
(406) 755-8555

September 3, 1981

Mr. Dennis L. Garsjo
Glasgo, MT
Fort Peck Route
Glasgow, MT 59230

Dear Mr. Garsjo:

We have received your letter of August 24 in which you seek to withdraw your application for an EPA evaluation of EG Supercharge Gasoline Treatment and EG Motor Oil Additive. As I mentioned to you in our telephone conversation of August 24, Section 311 of the Motor Vehicle Information and Cost Savings Act requires us to publish the results of our evaluation of your fuel additive. We will consider all information and data we have at this time. Since oil additives are not addressed under the provisions of this act, you may withdraw your application for this product.

If you wish to pursue an EPA evaluation of either of these products in the future, we are prepared to work with you again. Please contact me if you have any questions or require further information.

Sincerely,

Merrill W. Korth, Device Evaluation Coordinator
Test and Evaluation Branch

bcc: M. Korth