

PRODUCT DATA

QUAKER CHEMICAL CORPORATION CONSHOHOCKEN, PENNSYLVANIA

FERROCOTE 61 MAL HCL 1

MILL APPLIED LUBRICANT/CORROSION PREVENTIVE/DRAWING COMPOUND

This product is a flexing, blank washing, blanking, stamping, and drawing lubricant. This product is a lubricant-rust preventive that is designed to be applied to steel sheet and/or blanks in any of the above operations. This product contains a system of high film strength synthetics in combination with organic corrosion inhibitors. It is an oil dispersed material containing extreme pressure and polar additives for both E/P. lubrication and acid resistance. It reduces galling and provides excellent corrosion protection. This product can be applied by the normal application methods used for coating oils at all mill speeds and can be coiled or stacked immediately after application.

This product is a drawing lubricant used for large surface area draws such as automobile quarter panels, fenders, hoods, and floor panels, as well as many appliance applications. The rust preventive properties of this product are similar to those of a good coating oil. This product contains small quantities of emulsifiers for ease of removal in industrial cleaning lines.

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, green liquid
Flash Point (C.O.C.):	370°F
Fire Point (C.O.C.):	415°F
Viscosity @ 100°F (S.U.S.):	220 ± 30
Weight per Gallon @ 60°F:	7.95 lbs.
Pour Point:	< 0°F
Film Thickness:	0.24 mils
Coverage per Gallon @ 250 mg/ft ² :	14,500 square feet/gallon
JAN H-972 Humidity Cabinet: (1010 Cold Rolled Steel)	15-20 days

RCA/C/F/IAR

The information contained and the recommendations made in this data sheet are based upon data collected and believed by us to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made herein with respect to the products described and the buyer must assume full responsibility for the results, from the use thereof. Consult the Material Safety Data Sheet and container label regarding storage, proper use and disposability.

MATERIAL SAFETY DATA SHEET

FERROCOTE(R) 61 MAL HCL 1
QUAKER CHEMICAL CORPORATION

Page 1 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER:
QUAKER CHEMICAL CORPORATION
ELM STREET
CONSHOHOCKEN, PA 19428-0809
(610) 832-4000

EMERGENCY TELEPHONE NUMBERS:

* TRANSPORTATION:

** CHEMTREC: (800) 424-9300

* EMERGENCY HEALTH & SAFETY INFORMATION:

** QUAKER CHEMICAL CORP: (800) 523-7010

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	CHEMICAL NAME	PERCENT
64742-53-6	SEVERELY HYDROTREATED LIGHT NAPHTHENIC DISTILLATES	40-45%
64742-52-5	SEVERELY HYDROTREATED HEAVY NAPHTHENIC DISTILLATES	15-20%
64742-18-3	ACID TREATED HEAVY NAPHTHENIC DISTILLATES	1-5%
68783-96-0	CALCIUM SULFONATE	5-10%
68608-26-4	SULFONIC ACIDS, PETROLEUM, SODIUM SALTS	1-5%

3. HAZARDS IDENTIFICATION

THRESHOLD LIMIT VALUE:

THE PEL (OSHA) AND THE TLV (ACGIH) IS 5 mg/m³ FOR OIL MISTS. SECTION 2 MAY LIST SEVERELY HYDROTREATED DISTILLATES, SEVERELY SOLVENT REFINED DISTILLATES OR SOME OTHER DISTILLATES. THESE MATERIALS ARE ALL MINERAL OILS AND THE EXPOSURE LIMITS LISTED ABOVE WOULD APPLY TO THESE MATERIALS.

PRIMARY ROUTES OF ENTRY:

INHALATION, SKIN CONTACT, EYE

EYE CONTACT:

MAY CAUSE EYE IRRITATION IF SPLASHED INTO EYES.

SKIN CONTACT:

REPEATED OR PROLONGED CONTACT WITH BASE PRODUCT MAY CAUSE IRRITATION LEADING TO VARIOUS SKIN DISORDERS SUCH AS DERMATITIS, OIL ACNE, OR FOLICULITIS.

INHALATION:

Inhalation of vapor (generated at high temperatures only) or oil mist from this product may cause mild irritation of the upper respiratory tract.

EFFECTS OF OVEREXPOSURE:

INGESTION: INGESTION MAY CAUSE NAUSEA, DIARRHEA AND STOMACH DISCOMFORT.

MATERIAL SAFETY DATA SHEET

FERROCOTE(R) 61 MAL HCL 1
QUAKER CHEMICAL CORPORATION

Page 2 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

4. FIRST AID MEASURES

EYES: Flush promptly with cool running water for at least 15 minutes. Call a physician.

SKIN: Wash thoroughly with soap and water. Call a physician if necessary.

INGESTION: Call a physician. Never give anything by mouth to an unconscious person.

INHALATION: IF inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD USED): 400 F. (C.O.C.)

FLAMMABLE LIMITS: ND LOWER: ND UPPER: ND

EXTINGUISHING MEDIA:
CO2, FOAM, DRY CHEMICAL.

SPECIAL FIRE FIGHTING PROCEDURES:
WEAR NIOSH/MSHA APPROVED SELF CONTAINED BREATHING APPARATUS (SCBA).

UNUSUAL FIRE AND EXPLOSION HAZARDS:
NONE

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
SOAK UP WITH ABSORBANT MATERIAL AND REMOVE TO CLOSED CONTAINER. WASH AREA WITH MILD DETERGENT AND WATER.

ENVIRONMENTAL IMPACT:
NOT DETERMINED

7. HANDLING AND STORAGE

STORAGE TEMPERATURE (MIN./MAX.):
40 F./100 F.

SHELF LIFE:
6 MONTHS

SPECIAL SENSITIVITY:
NOT DETERMINED

MATERIAL SAFETY DATA SHEET

FERROCOTE (R) 61 MAL HCL 1
QUAKER CHEMICAL CORPORATIONPage 3 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

7. HANDLING AND STORAGE (Cont.)

HANDLING AND STORAGE PRECAUTIONS:

Do not get in eyes, on skin or on clothing. Do not take internally. Wash thoroughly after handling.

OTHER PRECAUTIONS:

NONE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION:

WEAR SAFETY GLASSES.

PROTECTIVE GLOVES:

RUBBER (BUTYL OR NATURAL) OR NITRILE.

RESPIRATORY PROTECTION:

FOR FIRE CONDITIONS OR EXPOSURE ABOVE TLV: WEAR NIOSH/MSHA APPROVED RESPIRATORS.

VENTILATION REQUIREMENTS:

LOCAL EXHAUST IS RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:

EYE WASH FACILITY AND SAFETY SHOWER RECOMMENDED.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING/MELTING POINT:

> 300 F.

SPECIFIC GRAVITY (H2O=1):

0.954 @ 60 F.

VAPOR DENSITY (AIR=1)

ND

VAPOR PRESSURE:

0.22 mm HG @ 25 C.

PERCENT VOLATILE BY VOLUME (%):

3.44%

PERCENT SOLID BY WEIGHT:

ND

EVAPORATION:

ND

MATERIAL SAFETY DATA SHEET

FERROCOTE (R) 61 MAL HCL 1
QUAKER CHEMICAL CORPORATION

Page 4 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

9. PHYSICAL AND CHEMICAL PROPERTIES (Cont.)

SOLUBILITY IN WATER:
INSOLUBLE

PH:
NA

APPEARANCE AND ODOR:
CLEAR TO HAZY DARK GREEN LIQUID WITH LOW, BLAND ODOR

VOLATILE ORGANIC COMPOUND (VOC):
0.23 LBS/GAL (ASTM METHOD D-2369) RUN AT 110 C +/- 5 C

10. STABILITY AND REACTIVITY

STABILITY:
STABLE.

CONDITIONS CONTRIBUTING TO INSTABILITY:
NONE.

HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR

INCOMPATIBILITY:
STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS:
(THERMAL) CO, CO₂, SO_x, NO_x.

11. TOXICOLOGICAL INFORMATION

ANY PRODUCT CONTAINING A SUBSTANCE FOR WHICH OSHA HAS ESTABLISHED A PERMISSIBLE EXPOSURE LIMIT (PEL) IS CONSIDERED HAZARDOUS. OSHA HAS ESTABLISHED A PEL OF 5 MG/M³ FOR WORKER EXPOSURE TO AIR BORNE MISTS OF MINERAL OILS. THEREFORE, THE PRESENCE OF MINERAL OILS BRINGS THIS PRODUCT WITHIN THE PROVISIONS OF THE OSHA HAZARD COMMUNICATION STANDARD WHERE THE PEL REACHES OR EXCEEDS 5 MG/M³. HEALTH STUDIES HAVE SHOWN THAT MANY PETROLEUM HYDROCARBONS POSE POTENTIAL HUMAN HEALTH RISKS WHICH MAY VARY FROM PERSON TO PERSON. AS A PRECAUTION, EXPOSURE TO LIQUIDS, VAPOR, MISTS OR FUMES SHOULD BE MINIMIZED.

THIS PRODUCT DOES NOT CONTAIN ANY MATERIAL SHOWN TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM (NTP), THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) OR OSHA.

SKIN IRRITATION STUDIES HAVE BEEN PERFORMED ON THIS PRODUCT.
SKIN IRRITATION - EXPECTED TO BE A DERMAL NON-IRRITANT (IN VITRO DERMAL

MATERIAL SAFETY DATA SHEET**FERROCOTE (R) 61 MAL HCL 1**
QUAKER CHEMICAL CORPORATIONPage 5 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

11. TOXICOLOGICAL INFORMATION (Cont.)

IRRITATION METHOD)

12. ECOLOGICAL INFORMATION

NO DATA AVAILABLE

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL EPA REGULATIONS.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

NOT REGULATED.

D.O.T. HAZARD CLASS:

N.A.

UN/NA ID NUMBER:

N.A.

EMERGENCY RESPONSE GUIDE NUMBER:

NOT APPLICABLE

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA):

THIS PRODUCT AND/OR ALL THE INGREDIENTS CONTAINED IN THIS PRODUCT HAVE BEEN REGISTERED UNDER THE TOXIC SUBSTANCES CONTROL ACT.

R.C.R.A.:

THIS PRODUCT DOES NOT MEET THE DEFINITIONS OR CONTAIN ANY SUBSTANCE APPEARING IN THE LISTINGS CONTAINED IN 40CFR261, "IDENTIFICATION AND LISTING OF HAZARDOUS WASTE."

THIS PRODUCT DOES NOT CONTAIN ANY MATERIAL WHICH IS SUBJECT TO THE ANNUAL REPORTING REQUIREMENTS UNDER SECTION 313 OF SARA, TITLE III. CONTACT THE EPA FOR INFORMATION REGARDING THE REPORTING REQUIREMENTS.

THIS PRODUCT HAS BEEN REVIEWED IN ACCORDANCE WITH SECTIONS 311 (MSDS INVENTORY) AND SECTION 312 (TIER I/II INVENTORY) OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (CFR 40 370.2) FOR "HAZARD CATEGORY" STATUS UNDER APPLICABLE DEFINITIONS, THIS PRODUCT MEETS THE FOLLOWING CATEGORIES:

MATERIAL SAFETY DATA SHEET

FERROCOTE(R) 61 MAL HCL 1
QUAKER CHEMICAL CORPORATION

Page 6 of 6
Revised 4/04/01
Replaces 9/02/99
Printed 5/08/01

15. REGULATORY INFORMATION (Cont.)

IMMEDIATE (ACUTE) HEALTH HAZARD.

THIS PRODUCT DOES NOT CONTAIN OR WAS NOT MANUFACTURED WITH ANY EPA CLASS I OR CLASS II OZONE DEPLETING SUBSTANCES.

TRADE SECRET CLAIM IS MADE IN ACCORDANCE WITH SECTION 317.2 OF THE PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (TITLE 34).

16. OTHER INFORMATION

THE INFORMATION CONTAINED IN THIS MATERIAL SAFETY DATA SHEET IS BASED ON THE NEAT OR CONCENTRATED PRODUCT AS SHIPPED.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATING (HMIS)

HEALTH*	1
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	B

*PERSONAL PROTECTION RECOMMENDATIONS SHOULD BE REVIEWED BY PURCHASERS. WORKPLACE CONDITIONS ARE IMPORTANT FACTORS IN SPECIFYING ADEQUATE PROTECTION.

REASON FOR ISSUE . . . : ISSUE NEW MODIFICATION
PREPARED BY : KATHRYN F. STRANG
TITLE : MANAGER, REGULATORY & ENVIRONMENTAL AFFAIRS
APPROVAL DATE : SEPTEMBER 3, 1999
PRODUCT NUMBER : K-11527

THIS PRODUCT'S SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH/SAFETY/ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US AND IS BELIEVED TO BE ACCURATE. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY USE, OR ANY OTHER WARRANTY IS EXPRESSED OR TO BE IMPLIED, REGARDING THE ACCURACY OF THESE DATA, THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, OR THE HAZARDS CONNECTED WITH THE USE OF THE PRODUCT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. SUCH CONDITIONS SHOULD COMPLY WITH ALL FEDERAL REGULATIONS CONCERNING THE PRODUCT. QUAKER CHEMICAL CORPORATION ASSUMES NO LIABILITY FOR ANY INJURY OR DAMAGE, DIRECT OR CONSEQUENTIAL, RESULTING FROM THE USE OF THIS PRODUCT UNLESS SUCH INJURY OR DAMAGE IS ATTRIBUTABLE TO NEGLIGENCE ON THE PART OF QUAKER CHEMICAL CORPORATION.

NA = NOT APPLICABLE, ND = NOT DETERMINED, < = LESS THAN, > = GREATER THAN