



Formerly Known As: Whitmore® Matrix® M

# Shell Gadus (Matrix M)

## Extreme-Service Grease with Moly

- Extreme Pressure
- Water Resistant
- Wear Protection

Shell Gadus (Matrix M) is a calcium sulfonate complex grease with molybdenum disulfide that is highly recommended for difficult applications such as extreme pressure, water, heat, or chemical attack.

### DESIGNED TO MEET CHALLENGES

#### Performance, Features & Benefits

##### Features

The thickener system itself has a protective effect, but the addition of moly creates a powerful layer of protection under conditions of extreme load and slow speed.

Shell Gadus (Matrix M) helps neutralize acids and also resists reacting with caustic materials. Shell Gadus (Matrix M) grease has prevented corrosion despite years of exposure to phosphoric acid fumes.

A continuous temperature of 400°F (200°C) is within its safe range. It can withstand 550°F (288°C) continuously, provided the bearing is replenished every 30 minutes with normal quantities of grease. Occasional temperature spikes to 600°F (315°C) can be sustained for 5 to 10-minute periods without melting or carbonizing.

Shell Gadus (Matrix M 2) meets the Bucyrus International specification for multi-purpose grease (SD 4711). Grades 1 and 2 meet standards KP0R -20, KP1R-20 and KP2R-10 per DIN 51502.

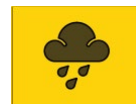
##### Benefits

- LONG LIFE - reduced relubrication frequency.
- WATER RESISTANT - seals out water, even in underwater applications.
- WEAR PROTECTION – recommended for slow to medium speed bearings and bushings. Especially useful for very high load applications.

#### Specifications, Approvals & Recommendations

For a full listing of equipment approvals and recommendations, please consult your local Shell & Whitmore Reliability Solutions Helpdesk.

#### Main Applications



Water / Chemicals: Phosphate processing, suction and wet end rolls on paper machines, outdoor cranes and ship lifts, boat trailer wheel bearings and other marine applications.

Highly Loaded Equipment: Pellet mills, shaker screens, belt conveyor pulleys, slewing bearings, pin and bushing, centrifuges, hammermills, sealed work roll bearings, fan bearings and many others.

High Temperature Applications: Oven conveyor bearings, plastic extruder bearings, rotary unions on roto-molders.

Automotive and Earthmoving Applications: Wheel bearings, U-joints, ball joints, pin-and-bushing pivot points and slewing bearings.

## Typical Physical Characteristics

| Properties                                       |           |         | Method       | Shell Gadus (Matrix M)       |                              |
|--|-----------|---------|--------------|------------------------------|------------------------------|
| NLGI Grade                                       |           |         |              | 1                            | 2                            |
| Worked Penetration - 60 strokes                  | @ 25°C    |         | ASTM D217    | 310-340                      | 265-295                      |
| Dropping Point                                   |           | °F (°C) | ASTM D2265   | 460 (238)                    | 500 (260)                    |
| Viscosity, Base Oil                              | @ 40°C    | cSt     | ASTM D445    | 125                          | 125                          |
|  | @ 100°C   | cSt     |              | 12                           | 12                           |
| Viscosity, Base Oil (with Polymer)               | @ 40°C    | cSt     | ASTM D445    | 800                          | 800                          |
|  | @ 100°C   | cSt     |              | 47                           | 47                           |
| Four Ball EP, Weld Point                         |           | kg      | ASTM D2596   | 800                          | 800                          |
| Four Ball Wear, Scar Width                       |           | mm      | ASTM D2266   | 0.44                         | 0.50                         |
| Water Washout                                    |           | % Loss  | ASTM D1264   | <8                           | <6                           |
| Rust Test  |           |         | ASTM D1743   | Pass                         | Pass                         |
| Low Temperature Pumpability<br>Lincoln Ventmeter | @ 400 psi | °F (°C) | OEM Standard | 12 (-11)                     | 34 (1)                       |
| Thickener  |           |         |              | Calcium Sulfonate<br>Complex | Calcium Sulfonate<br>Complex |

These characteristics are typical of current production. Whilst future production will conform to Shell & Whitmore Reliability Solutions specification, variations in these characteristics may occur.

## Health, Safety & Environment

### Health and Safety

Shell Gadus (Matrix M) is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from <http://www.epc.shell.com/>

### Protect the Environment

Take used oil to an authorized collection point. Do not discharge into drains, soil or water.

## Additional Information

### Advice

Advice on applications not covered here may be obtained from your Shell & Whitmore Reliability Solutions representative.