



## Black Bulls Makura Greases

Calcium Sulfonate Complex (HL-HT-EP)

### Description

**Black Bulls Makura:** Truly Multipurpose Calcium Sulfonate Complex grease for severe heavy shock loads, high temperature, extreme pressure and demanding environment particularly having water, dust and extreme operating temperatures.

- Heavy shock load
- Extreme pressure at elevated temperatures
- Continuous heavy and shock load even in severe demanding applications (water, dust, high temperature).
- Anti-corrosion
- Water resistance

### Application:

Applications for **Black Bulls Makura Calcium Sulfonate Complex greases** include steel mills, paper manufacturing mills, cement, mining, automotive, agricultural, construction and food industry.

### Steel Mills and Paper Industry:

In steel plants, greases for bearing lubrication are subject to high loads, high heat and water. **Black Bulls Makura CLX-460 grease** is suitable for the lubrication of bearings in steel plants, continuous castings and rolling mills.

Comparing In a transportation roller bearing or similar application in a hot rolling mill to other commercial greases found in steel mills, **Black Bulls Makura CLX-460** grease performs exceptionally well even when operating temperatures were above 150°C. Black Bulls Makura Calcium Sulfonate Complex offered a significant improvement in performance, bearing life and extended re-greasing intervals in steel mills and paper manufacturing industry.

### Automotive:

Automotive applications for **Black Bulls Makura CLX greases** include but not limited to chassis, ball joints, universal joints and wheel bearings. Extended service life even at continuous high temperature applications such as bearings in automotive disk and drum brakes.





### Industrial Applications:

Industrial applications include electric motors, continuous casters, conveyors, ball mills, crushers and off-shore applications.

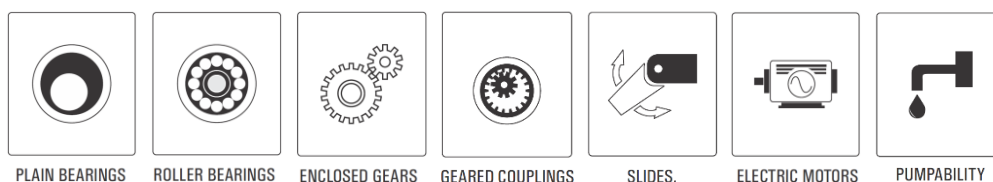
**Performance Classification:** ISO 6743-9: L-XBFIB 1, ISO 6743-9: L-XBFIB 2, DIN 51502: KP1/2R -25, ASTM-D-4950 LB-GC or better.

### Typical Physical Properties :

| Properties                       | ASTM     | CLX-1-220                 | CLX-2-220                 | CLX-1-460                 | CLX-2-460                 |
|----------------------------------|----------|---------------------------|---------------------------|---------------------------|---------------------------|
| NLGI Grade                       | D217     | 1                         | 2                         | 1                         | 2                         |
| Penetration (60 Stroke)          | D217     | 320-335                   | 275-290                   | 320-335                   | 275-290                   |
| Thickener                        | Declared | Calcium Sulfonate Complex | Calcium Sulfonate Complex | Calcium Sulfonate Complex | Calcium Sulfonate Complex |
| Color                            | Visual   | Brown/Blue/Green/Ambler   | Brown/Blue/Green/Ambler   | Brown/Blue/Green/Ambler   | Brown/Blue/Green/Ambler   |
| Base Oil                         | Declared | Mineral Blend             | Mineral Blend             | Mineral Blend             | Mineral Blend             |
| Base Oil Viscosity cSt@40°C      | D445     | 220                       | 220                       | 460                       | 460                       |
| Temperature of Use               | D2265    | 180°C **                  | 180°C **                  | 180°C **                  | 180°C **                  |
| Melting Point                    | D566     | >300°C                    | >300°C                    | >300°C                    | >300°C                    |
| Odor                             | Visual   | Agreeable                 | Agreeable                 | Agreeable                 | Agreeable                 |
| Non-Corrosive                    | D1743    | Pass                      | Pass                      | Pass                      | Pass                      |
| Four Ball Wear scar dia, mm, max | D2266    | 0.4                       | 0.4                       | 0.4                       | 0.4                       |
| Four Ball EP Weld, kg, min       | D2596    | >800                      | >800                      | >800                      | >800                      |
| Storage Temperature*             | Declared | 25°C                      | 25°C                      | 25°C                      | 25°C                      |
| Shelf Life*                      | Declared | 5 Years*                  | 5 Years*                  | 5 Years*                  | 5 Years*                  |
| Pumpability (Long distance)      | Declared | Excellent                 | Fair                      | Good                      | Fair                      |

\*Stored at room temperature and unopened container.

\*\* If bearings operating near or above recommended temperatures, re-greasing intervals should be reviewed.





Technical data sheet

BB Makura Calcium Sulfonate Complex Greases

## Packaging:

|               |  |
|---------------|--|
| <b>0.5 KG</b> | <i>plastic or metal can (Carton of 24 pcs)</i>       |
| <b>1 KG</b>   | <i>plastic or metal can (Carton of 12 or 24 pcs)</i> |
| <b>2 KG</b>   | <i>plastic pail</i>                                  |
| <b>5 KG</b>   | <i>plastic pail</i>                                  |
| <b>15 KG</b>  | <i>plastic or metal pail</i>                         |
| <b>20 KG</b>  | <i>metal pail</i>                                    |
| <b>180 KG</b> | <i>metal drum</i>                                    |