Shell & Whitmore Reliability Solutions

Technical Data Sheet

Formerly Known As: **Whitmore® BioRail®**

Shell **Gadus** ***(BioRail)***

- *Biodegradable*
- *Wide Temperature Range*
- *Reduces Noise*

Biodegradable High-Performance Rail Curve Grease

Shell Gadus (BioRail) is a calcium sulfonate based, high-performance rail curve grease. It is based on oils from vegetable sources that are 100% biodegradable. The non-oil components are partially biodegradable and are nonhazardous.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

Features

In wayside systems Shell Gadus (BioRail) forms a vertical bead that is easily picked up. It carries through multiple curves and forms a coating on the gage face that is clearly visible for ease of inspection. In many cases the use of Shell Gadus (BioRail) will result in reduced grease consumption.

Shell Gadus (BioRail) empties evenly from the holding tank, without slumping down to form a “V”. This minimizes pump cavitation. Unlike some vegetable-based products, Shell Gadus (BioRail) will not gel over time. It remains pumpable and does not plug ports.

Shell Gadus (BioRail) has been extensively tested on Class 1 freight railroads in the United States, which represent the most severely loaded conditions anywhere in the world. Field experience has shown that the carry down, coating of the rail, and level of wear protection are equal to Whitmore’s non-biodegradable rail curve greases.

Benefits

- BIODEGRADABLE – all grades of Shell Gadus (BioRail) are classified as “Readily Biodegradable”.
- NO HAZARDOUS COMPONENTS - the non-oil components are partially biodegradable and nonhazardous.
- NOISE REDUCTION - especially valuable in urban areas.
- ADHESIVE AND COHESIVE - excellent track carry down, reducing the number of wayside lubricators.
- WIDE TEMPERATURE RANGE – the need for seasonal product grade changes is eliminated in many areas.

Main Applications

Shell Gadus (BioRail) is suitable for lubrication of rail curves where it protects the gage face and wheel flanges. It can also be used in bearings and to lubricate wire ropes, particularly in ecologically sensitive areas.

Specifications, Approvals & Recommendations

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

Typical Physical Characteristics

Properties			Method	Shell Gadus (BioRail)		
Grade				1	1.5	2
Worked Penetration - 60 strokes	@ 25°C		ASTM D217	310-340	285-315	265-295
Dropping Point		°F (°C)	ASTM D2265	400 (204)	400 (204)	400 (204)
Viscosity, Base Oil	@ 40°C	cSt	ASTM D445	58 – 72	55 – 60	54 – 60
	@ 100°C	cSt		7.0 – 13.0	10.5 – 11.5	10.5 – 11.5
Viscosity, Base Oil with Polymer	@ 40°C	cSt	ASTM D445	195.5 – 239.0	318.5 – 389.5	318.5 – 389.5
	@ 100°C	cSt		39.5 – 48.5	42.0 – 48.0	42.0 – 51.5
Density **Specific Gravity**	@ 60°F (15.5°C)	lb/gal g/cc	Gardner Method	8.85 1.060	8.82 1.057	8.89 1.065
Four Ball Weld EP, Weld Point		kg	ASTM D2596	500	500	500
Four Ball Wear, Scar Width		mm	ASTM D2266	0.60	0.68	0.68
MITI Test OECD 301B				Pass	Pass	Pass
Color				Brown	Brown	Brown
Thickener				Calcium Sulfonate	Calcium Sulfonate	Calcium Sulfonate

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 (BioRail) 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.