

Building Your Industrial Expertise

The webinar will begin in
less than 10 minutes.



Building Your Industrial Expertise

The webinar will begin in less than 5 minutes.





TEST YOUR KNOWLEDGE

Which type of cement is produced to lower carbon footprint?



Portland Cement

Non-Hydraulic Cement

Green Cement





TEST YOUR KNOWLEDGE

What is the most commonly produced type of steel?



Carbon Steel

Stainless Steel

Alloy Steel





TEST YOUR KNOWLEDGE

What ore is used to produce aluminum?



Taconite

Smaltite

Bauxite



Building Your Industrial Expertise



Amber Fessler - NLGI CLGS; STLE CLS & OMA-I

- CITGO Senior Sector Manager
- Materials Engineer
- 14 Years of Experience in Lubricants
- STLE Certified
 - Certified Lubrication Specialist
 - Oil Monitoring Analyst I
- NLGI Certified
 - Certified Lubricating Grease Specialist



Want Resources?

Program
Guides

Support
Literature

Social
Media
Toolkit

Webinars

The screenshot shows the CITGO MarketNet website. The header includes the CITGO logo, MarketNet branding, and a user ID. A navigation menu on the left lists various sections like ABOUT CITGO, ACCOUNT MANAGEMENT, and LUBES ADVISOR. The main content area features a grid of resource tiles including 'SHOP PRINT STORE', 'GO FOR THE GREEN', 'CLEARANCE SALE', 'MARKETER COUNCIL INFORMATION', 'AUTOMOTIVE LUBRICANTS PROGRAM', 'Webinars', 'Lubes Advisor', 'Learn About LubeAlert', 'NEW PRODUCTS', 'LubeAssure', 'PRODUCT CROSS REFERENCE', 'SOCIAL MEDIA TOOLKIT', 'GREASE TOOLKIT', and '2025 HEAVY-DUTY CONTEST'. A banner at the bottom promotes the '2025 Lubricants Programs Guide'.

Search

CITGO MarketNet® Lubes

Search

LATEST | ...ring process. Please note: Access to place orders in the current version will be removed on January 17, 2025. If you have not yet received your login information for...

Home (Lubes)

Welcome, Lubricants Customers, to CITGO MarketNet®

SHOP PRINT STORE

GO FOR THE GREEN

TWENTY TWENTY-FIVE LUBRICANTS PROGRAMS GUIDE

CLEARANCE SALE

MARKETER COUNCIL INFORMATION

AUTOMOTIVE LUBRICANTS PROGRAM

Webinars
CLICK TO REGISTER

Lubes Advisor

Learn About LubeAlert

NEW PRODUCTS

LubeAssure

PRODUCT CROSS REFERENCE

SOCIAL MEDIA TOOLKIT

GREASE TOOLKIT

2025 HEAVY-DUTY CONTEST

MARKETNET 2.0 ORDERING PORTAL

Now Available: 2025 Lubricants Programs Guide

View the [2025 Lubricants Programs Guide](#) to kick-start the new year right!

Future Webinars

September 29: Creating Value Through Oil Analysis, Part I

October 27: Creating Value Through Oil Analysis, Part II

November 17: Solving Problems with Industrial Synthetics



Matthew Gerber – STLE CLS & OMA-I

- CITGO Sr. Product Specialist
- B.S. Mathematics & Chemistry
- M.S. Mathematics
- 14 Years of Experience in Lubricants
- 10 Years of Laboratory Experience



David Turner – NLGI CLGS, STLE CLS & OMA-I

- CITGO Senior Sector Manager
- Chemical Engineer
- 40+ Years Experience in Lubricants
- Active in STLE, NLGI, and ASTM



Erica McDonald

- CITGO Lubricants Product Manager
- B.S. Integrative Biology with a minor in Chemistry
- 14 Years of Experience in Lubricants
 - Sr. Product Specialist – Fluid Technology
 - QC/QA Laboratory Experience



Doug Rice – NLGI CLGS; STLE CLS & OMA-I

- Sr. Product Specialist
 - Grease Technology
- B.S. Chemistry
- 32 Years of Experience in Lubricants including:
 - QC Laboratory Manager
 - Sr. Technical Service Representative
 - Sr. Account Manager





Industrial Markets

Basics of equipment components

Types of Mills / Industries

Getting into the Game

CITGO/Mystik/Clarion Products

Agenda

Market
Information



Market Outlook

1 Political
Climate

2 Urban
Development

3 Economy

Trends and Overview

Mining/Rock Crushing

- Infrastructure development
- Urbanization

Primary Metals

- Infrastructure Development
- Heavy industry

Cement Mills

- Infrastructure initiatives likely to increase demand
- Stable and sustainable practices growing demand

Sawmills

- Growth focused on sustainable practices
- Increased wood exports driving demand

Pellet Mills

- Wood pellets as renewable energy source

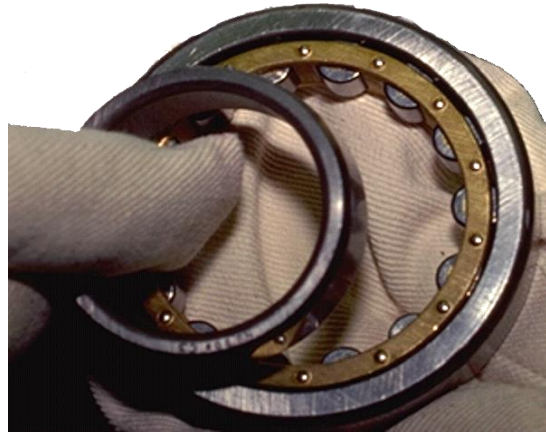
Basics of
Equipment Types



Bearing Types



Deep Groove Ball Bearing



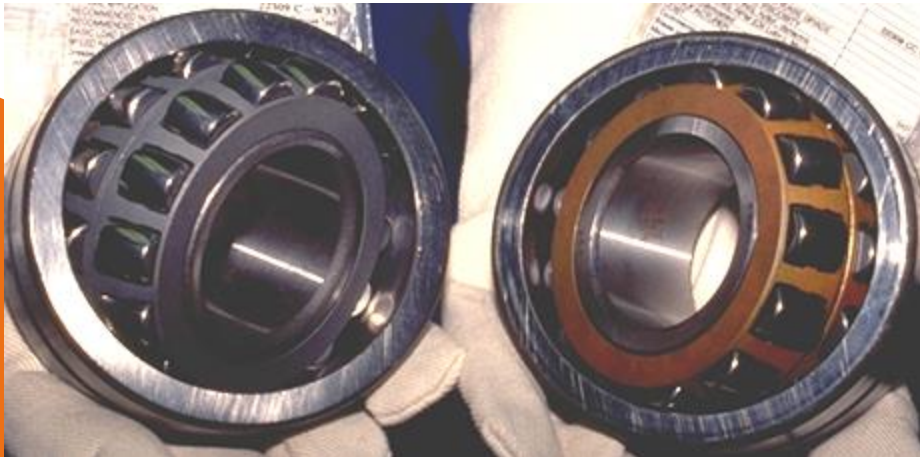
Cylindrical Roller Bearing



Tapered Roller Bearing



Needle Roller Bearing



Double Row Spherical Roller Bearing



Spherical Thrust Bearing

Gear Types



Spur



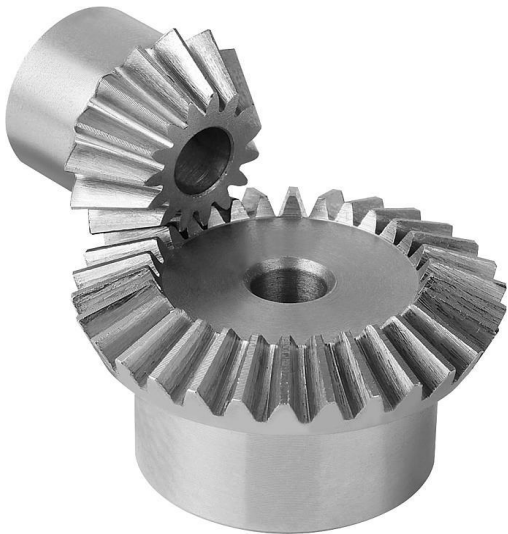
Planetary



Helical



Double Helical



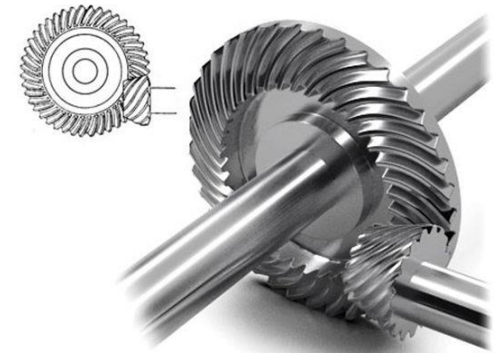
Bevel



Spiral Bevel



Worm

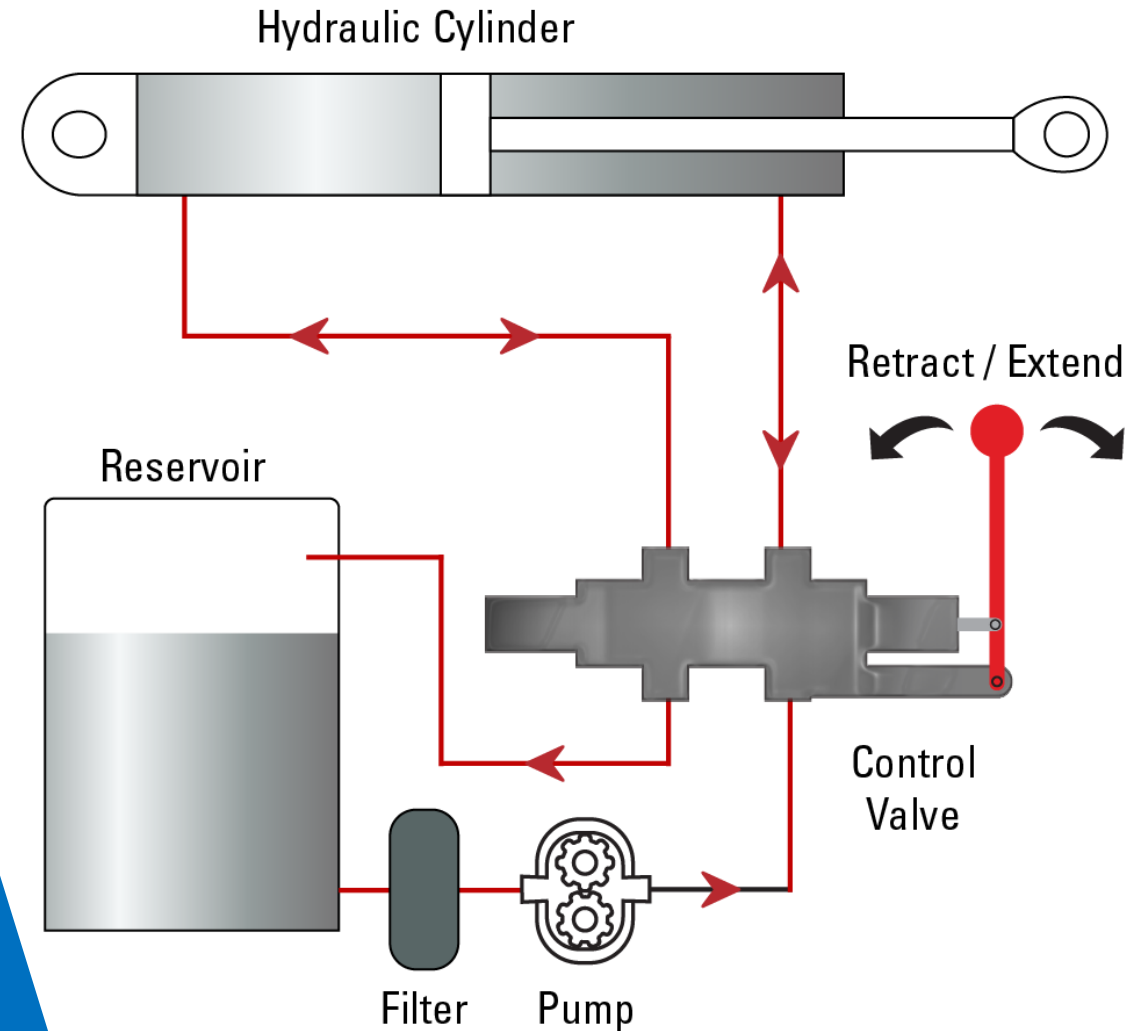


Hypoid

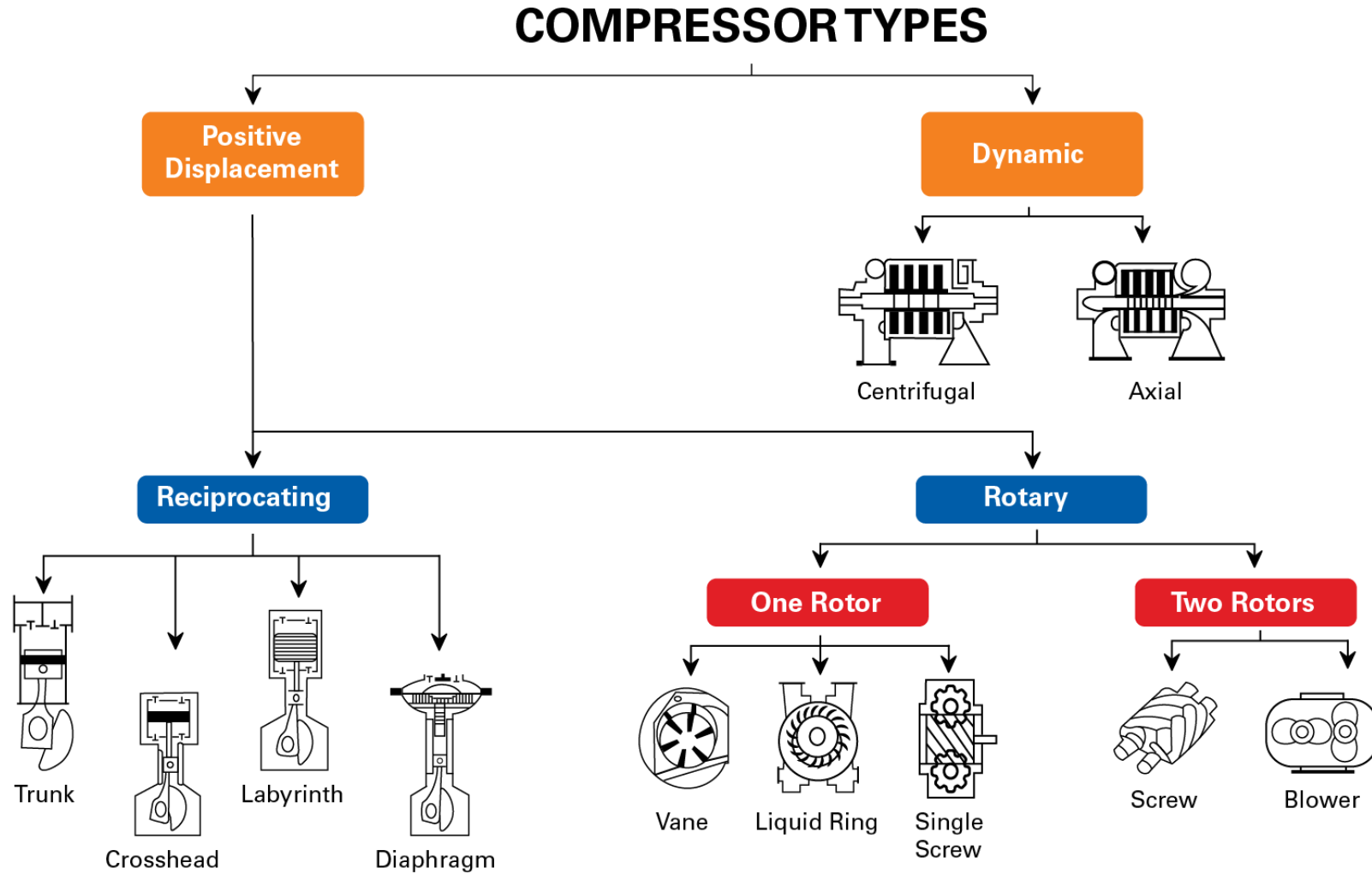
Hydraulics

Components:

- Fluid Reservoir
- Filter
- Pump
- Directional Control Valve
- Hydraulic Cylinder



Compressor Types



Power Generation **Turbines**

Types of turbines include:

- Hydroelectric
- Steam
- Gas
- Combined Cycle
- Aeroderivative

wowee!



Industry &
Mill Types



Mining Equipment

- Rock Drills
- Draglines
- Shovels
- Excavators
- Haul Trucks



Crushers

- Jaw
- Hammer
- Cone
- Gyratory
- Double Row Tooth



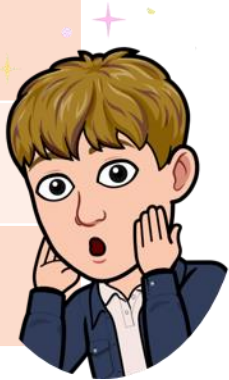
Ferrous Metals

- Ferrous metals contain iron
- Steel is an alloy of iron and carbon, with other components depending on the application:
 - Carbon Steel
 - Alloy Steel
 - Stainless Steel
 - Tool Steel



Non-Ferrous Metals

Metal	Common Uses
Aluminum	Transportation vehicles, food packaging, construction, energy
Copper	Wire, cables, energy
Lead	Lead-acid batteries, ammunition, pipes
Nickel	Batteries, electronics
Tin	Coatings, alloy production, solder
Titanium	Aerospace, medical
Zinc	Galvanization of ferrous metals





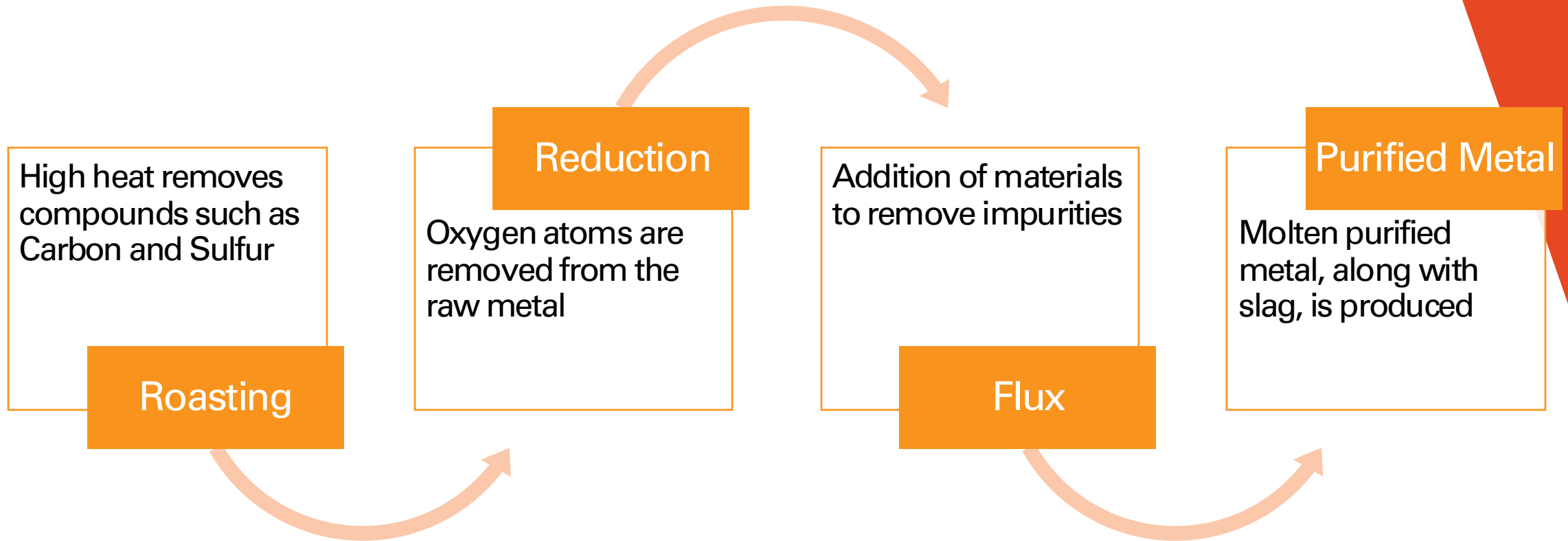
Quick **Geology** Lesson

This ore contains:

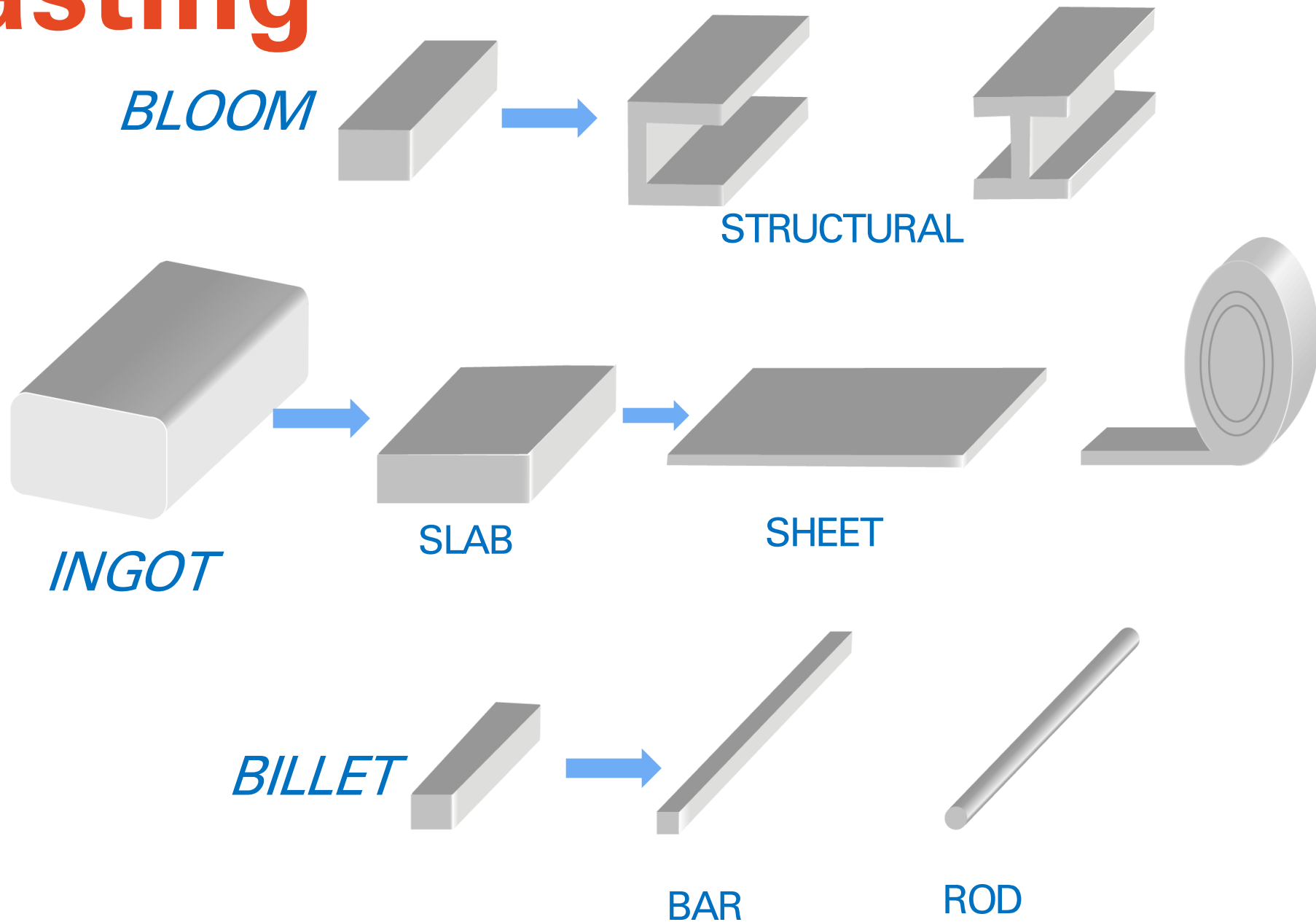
- Aluminum
- Iron
- Silicon
- Titanium
- Gallium
- Vanadium

Fun Fact: Most of the world's aluminum and gallium comes from bauxite!

Smelting



Casting

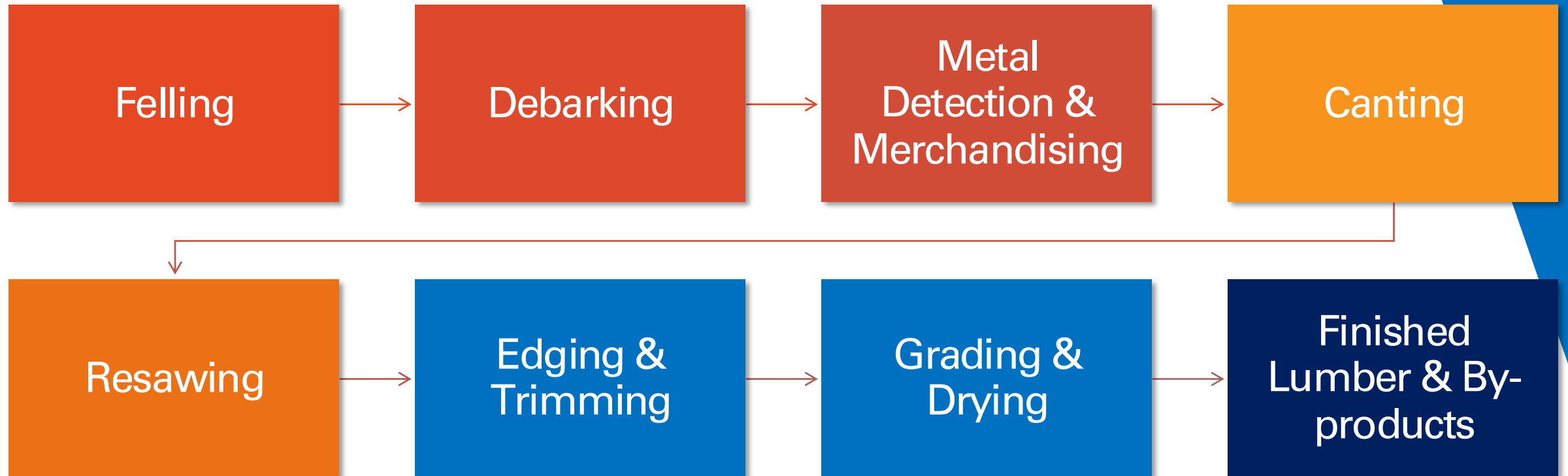


Sawmills

- Manufacture lumber and other by-products:
 - Timber, Dimensional Lumber, Boards
 - Sawdust, Bark, Woodchips
- Can be a fixed location or portable
- Have specialized equipment to handle different types of wood
 - **Softwoods:** Used primarily in construction materials
 - **Hardwoods:** Used in flooring and furniture



Sawmills

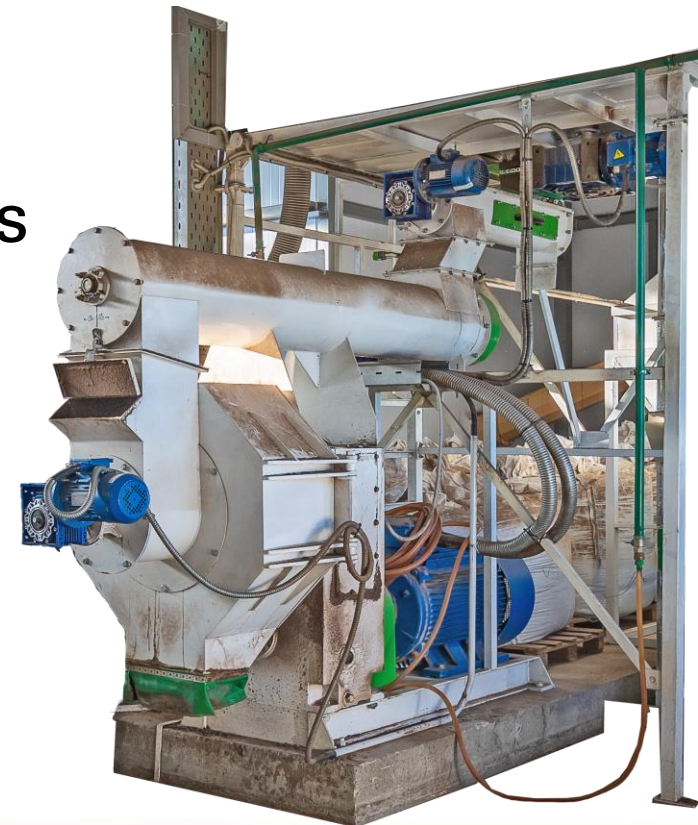


Pellet Mills

- Biomass is extruded under pressure to form pellets
- Wood pellet mills typically process wood fibers into pellets for burning
 - Home heating
 - Grills and Smokers
- Pellet mill manufacturers include Andritz (Bliss), CPM, Buhler & Schutte Hammermill
- Large rolling element bearings requiring frequent greasing

Lubrication Requirements:

- High Temperature Grease
- Higher Viscosity ≥ 220
- Extreme Pressure
- Anti-wear
- Good Flow Characteristics

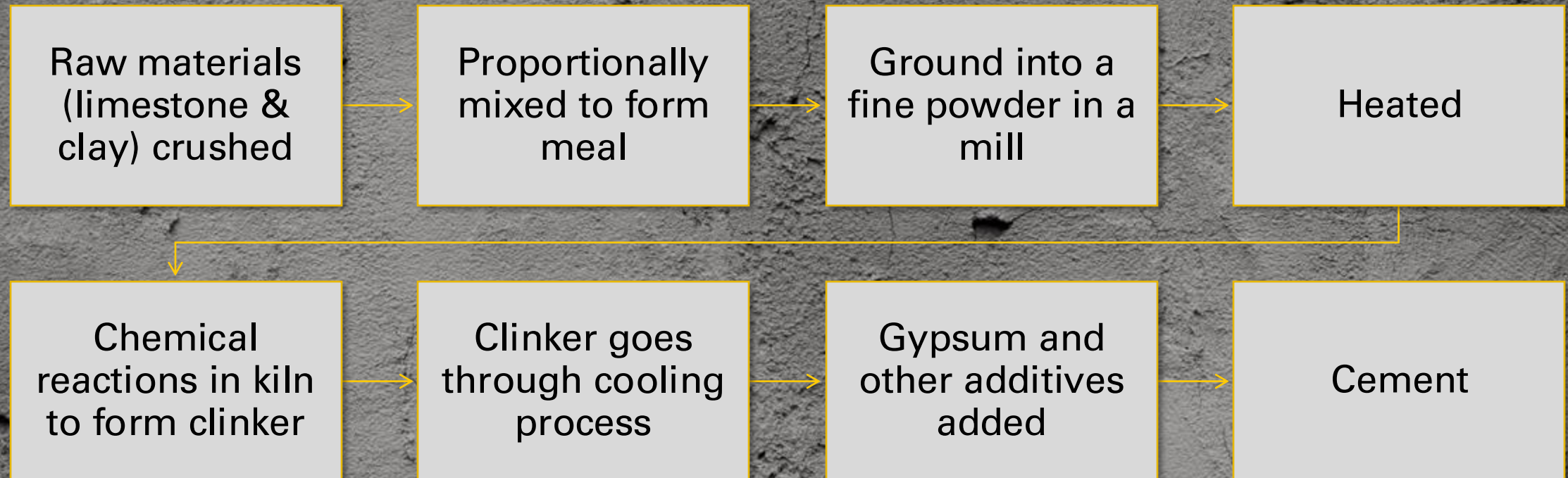


CEMENT MILLS

Cement is one of the primary materials used in the production of concrete

- Undergoes chemical reactions with water
- Serves as a binding agent
- Falls into two categories: hydraulic cement and non-hydraulic cement

Cement Mills



How to
Get in the Game



Barriers to Entry

Sustainability

- Growing focus on sustainable practices in the industry

Demand

- Fluctuations in market demand

Costs

- Process, logistics, and operation considerations

Regulations

- political shifts



Safety

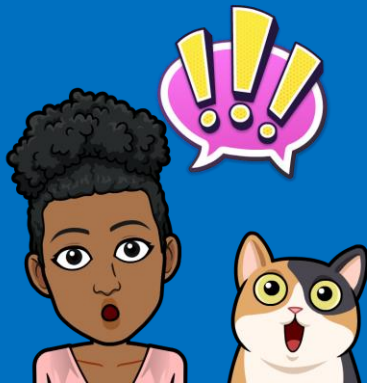
- PPE and facility safety training should be discussed.
- Gloves and goggles are used during the handling and storage of wood pellets.
- Fire-resistant clothing and metatarsal guards are likely required for primary metal facilities.
- Fall protection and respirators may be required.



Commonalities...

Similarities:

- Equipment Type
- Equipment Function
- Components within Equipment
- High awareness for safety



Differences:

- Lubrication Requirement
- Operating Conditions
- Required fluid cleanliness
- Compositional Requirements
- Equipment location
- Risk mitigation/contamination control (water, etc...)

...Across Industries

Product
Offerings



Hydraulic Oils

Standard
VI < 140

High VI
VI > 140

Extremely
High VI
VI > 160

Zinc
Containing

CITGO HyDurance AW
CITGO HyDurance AW Synthetic
Mystik JT-9 LeakShield AW

CITGO HyDurance AW All Temp
CITGO HyDurance AW/AL HVI 100
CITGO HyDurance AW CP
Mystik JT-9 LeakShield AW
Hydraulic HVI

CITGO AW Hydraulic Oil
Super MV

Zinc-Free

CITGO HyDurance AW NZ

CITGO HyDurance AW All
Temp NZ

CITGO HyDurance AW
Super NZ

Fire Resistant Hydraulic Fluids

CITGO FR WG-40XD® Hydraulic Fluid

- Premium water-glycol type fire-resistant fluid
- Factory Mutual Approved
- 40 cSt @ 40°C
- Suitable for applications up to 2000 psi
- Provides optimum performance in hydraulic systems
- **Applications:**
 - Steel Mills
 - Die Casting

CITGO Glycol FR-5046HP

- High-pressure polymer thickened water-glycol fluid
- Factory Mutual Approved
- ISO 46
- Suitable for applications up to 5000 psi
- Readily biodegradable
- **Applications:**
 - Environmentally sensitive areas
 - Mobile or stationary equipment

Compressor Oils

Air Compressor Lubricants

Compressor Oils 35LP and 45LP
CompressorGard® DE
CompressorGard® GE
CompressorGard® PAO
CompressorGard® PS 68
Clarion® CompressorGard®

Gas Compressor Lubricants

Compressor Oils 35LP and 45LP
Compressor Oil 7585
CompressorGard® H
CompressorGard® PAG
CompressorGard® SS
CompressorGard® XA 200
Gascom® R

Refrigeration Compressor Lubricants

CompressorGard® IPG 100
North Star Refrigeration Oils
Ice Machine Oil 68
Clarion® Synthetic Refrigeration Fluid

Gear Oils



AGMA EP Lubricants

CITGO EP Compounds

CITGO CITGEAR Synthetic EP

CITGO CITGEAR Synthetic PAG

AGMA Non-EP Lubricants

CITGO CITGEAR Synthetic HT

CITGO Pacemaker SD Oils

Specialty Products

CITGO CITGEAR XCO Oils

CITGO Cylinder Oils

CITGO MGW-OGL

Rust- &
Oxidation-
Inhibited

Oils

Circulating Oils

CITGO Pacemaker Oils

Turbine Oils

CITGO Pacemaker T Oils

CITGO Pacemaker ST-32

CITGO Pacemaker XL-32



Mystik Greases

Multi-Purpose Products

JT-6® Low Temp #2 Grease

JT-6® Synthetic 100 #1 Grease

JT-6® Synthetic 220 #2 Grease

JT-6® Synthetic 460 #2 Grease

Centralized System #0-00

Lithium Extreme Pressure Greases

LithoPlex 3% Moly and 5% Moly Greases

LithoPlex Dye Free #1 Grease

LithoPlex Industrial Greases

LithoPlex Pellet Mill #2 Grease

LithoPlex Mining Greases

Specialty Products

JT-6® Synthetic Electric Motor #2 Grease

JT-6® Industrial Robot Grease #0

High Speed Coupling Grease

LithoPlex Power Tool #2

Open Gear #1.5



Questions?



Please post your
questions using the
Q&A function.



For technical inquiries or issues:
Lubes Answer Line 800-248-4684
lubeshelp@citgo.com





Thank You!

See you next time

