

# Steel 102

The webinar will begin in  
less than 10 minutes.



# Steel 102

The webinar will begin in  
less than 5 minutes.





# Webinar starting soon; until then...



## TEST YOUR KNOWLEDGE

Steel is produced via two main routes: blast furnace-basic oxygen furnace (BF-BOF) and the electric arc furnace (EAF). What percentages are those of the total?



71% BF-BOF & 29% EAF

45% BF-BOF & 55% EAF

86% BF-BOF & 29% EAF

10% BF-BOF & 90% EAF



# Webinar starting soon; until then...



## TEST YOUR KNOWLEDGE

Over \_\_\_\_ of the 3,500 steel grades in use today did not exist 20 years ago.



35%

50%

75%

90%





# Webinar starting soon; until then...



## TEST YOUR KNOWLEDGE

Steel is a permanent material that can be infinitely recycled and is \_\_\_\_ recyclable without loss of quality.



70%

80%

90%

100%



# Steel 102



**Mystik**  
LUBRICANTS

  
**CITGO**  
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 **clarion**  
LUBRICANTS



# Amber Fessler– CLGS, CLS & OMA-I

- CITGO Senior Technical Services Representative
- Materials Engineer
- 12 Years of Experience in Lubricants
- STLE Certified
  - Certified Lubrication Specialist
  - Oil Monitoring Analyst I
- NLGI Certified
  - Certified Lubricating Grease Specialist



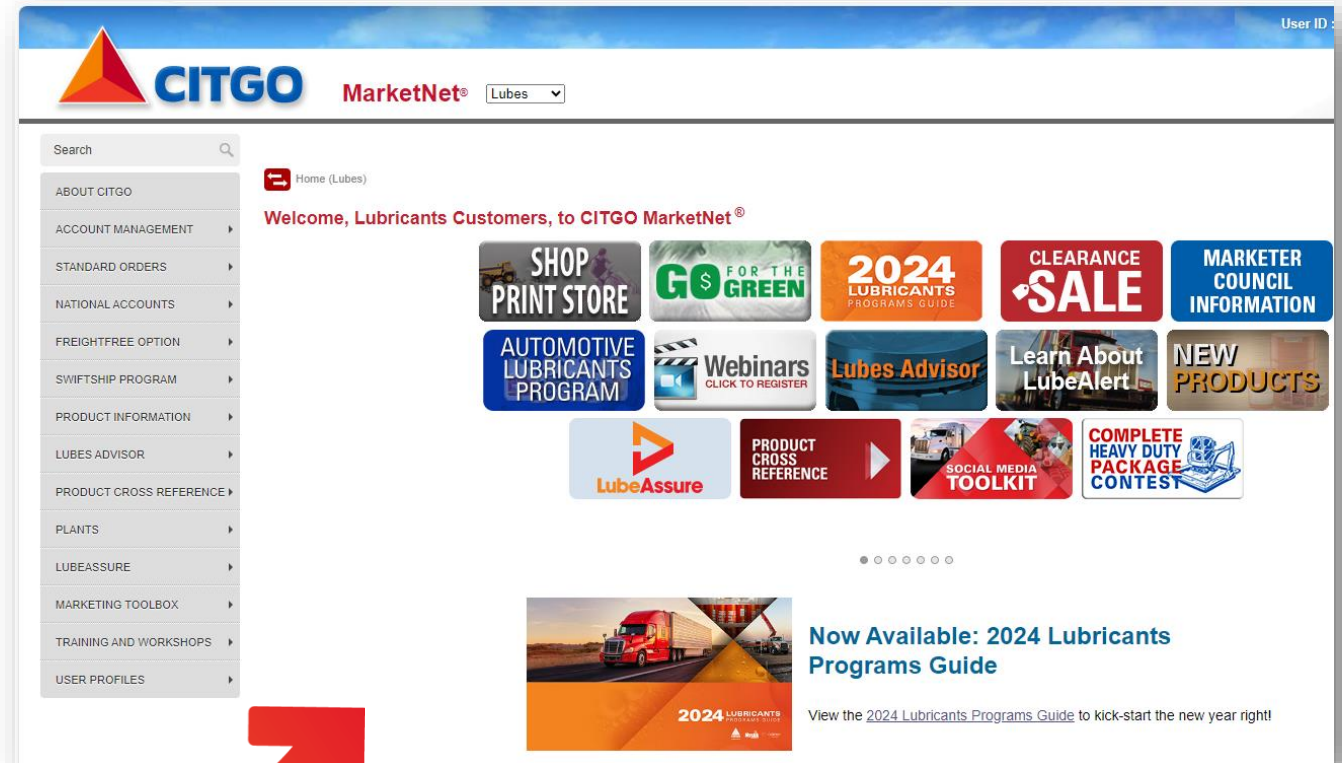
# Want Resources?

Complete  
HD  
Package  
Contest

Support  
Literature

Social  
Media  
Resources

Webinars





# Future Webinars

**July 19: Natural Gas Engine  
Oils & Power Generation**

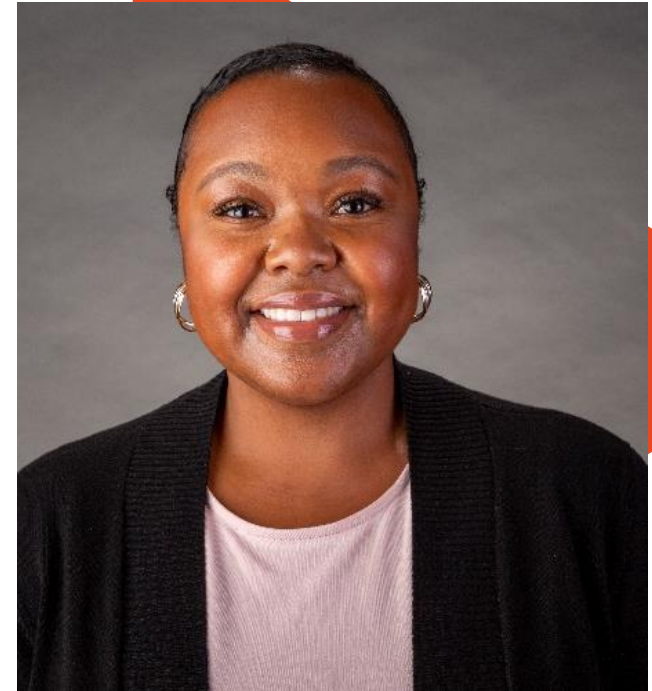
**August 23: Agriculture &  
Forestry Industries**

**September 20: Industrial Plant  
Utilities**



# Erica McDonald

- CITGO Lubricants Sr. Product Specialist
- B.S. Integrative Biology with Minor in Chemistry
- 12 Years in the Lubricants Industry, including extensive experience at the CITGO Cicero Lab
- LubeAlert Oil Condition Monitoring Program Support





# Tobiah Isbell

- CITGO Product Specialist
  - Grease Technology
- B.S. in Chemical Engineering
- 9 Years of Experience in the Lubricants Industry



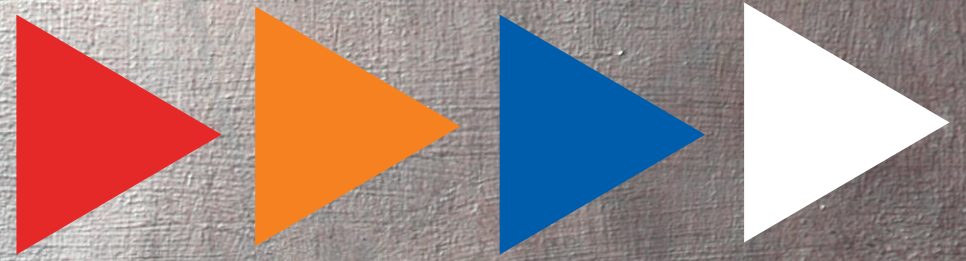
# Luke Buchanan - CLS

- CITGO Sr. Account Manager
- 11 Years of Selling Experience in the Lubricants Industry





# Agenda



Overview of Finished Steel Products

Steel Casting Process

Selling to the Steel Industry

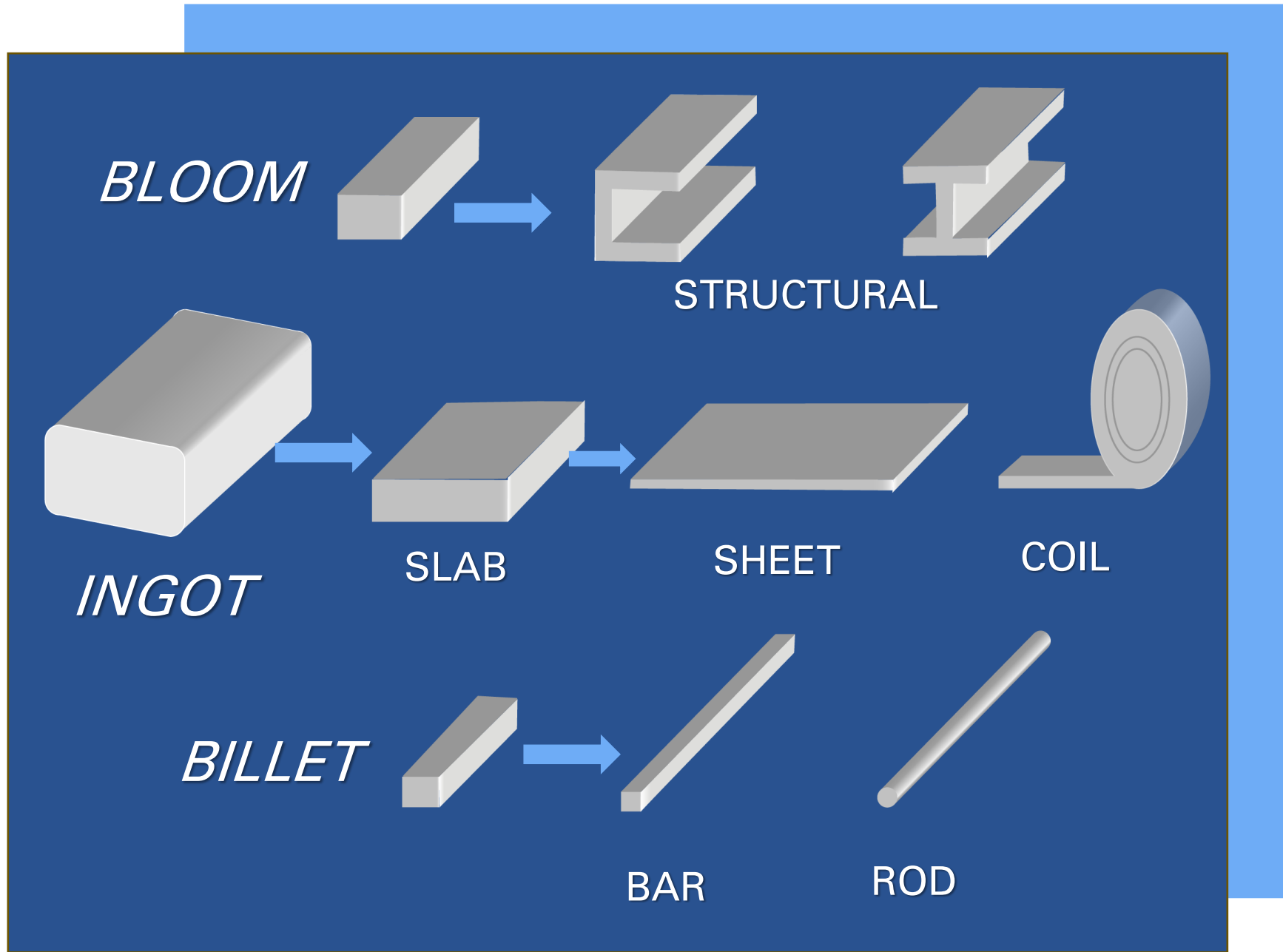
Steel Industry Lubricants Product Portfolio





# Overview of Finished Steel Products

# Steel Forms





# STEEL is a Big DEAL

Food &  
Beverage

Automotive

Agriculture

Construction

Energy

Transportation

Why is Steel Valuable?

Resilient  
&  
Sustainable

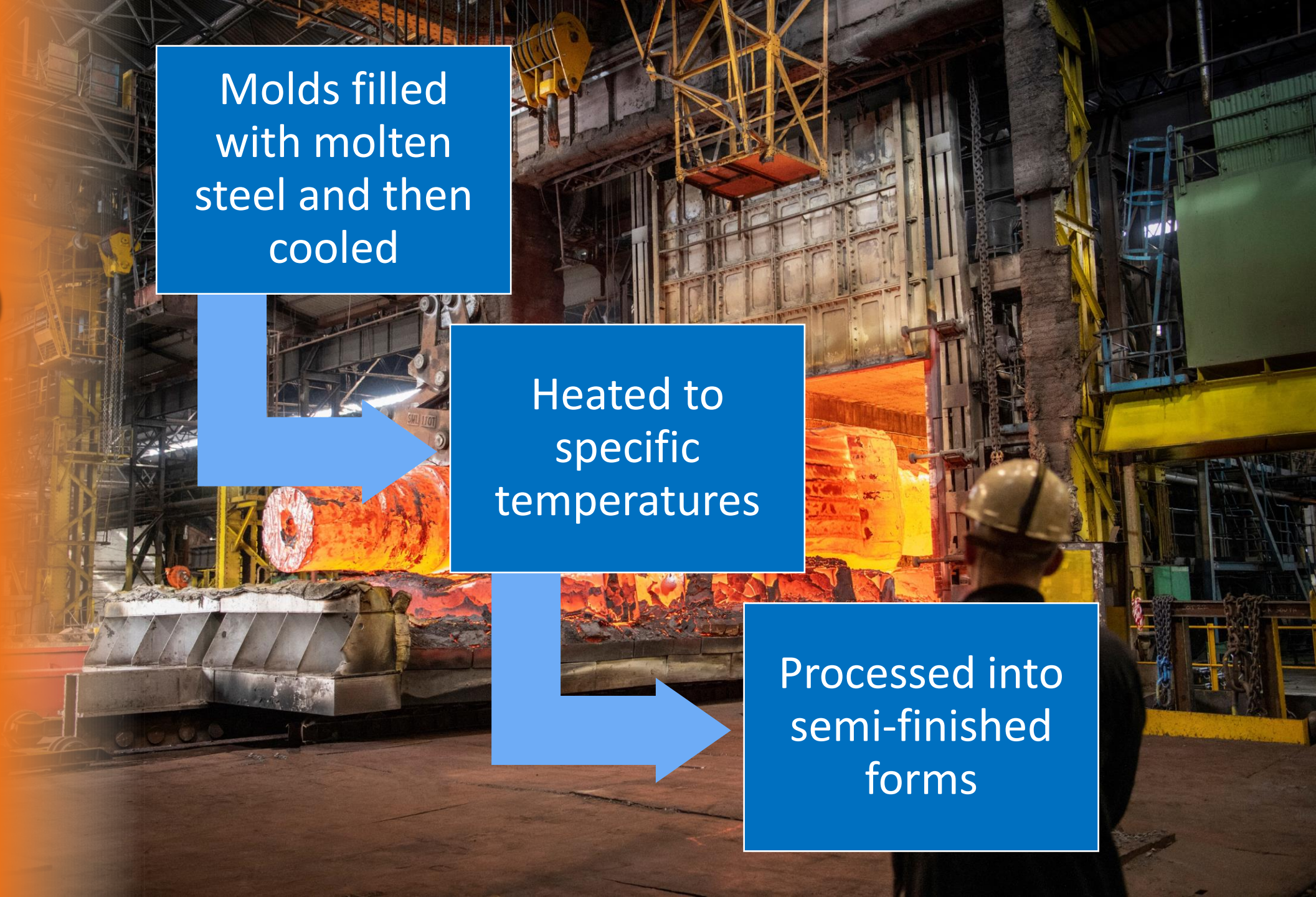


# Steel Casting Process






# Conventional Casting



Molds filled  
with molten  
steel and then  
cooled



Heated to  
specific  
temperatures



Processed into  
semi-finished  
forms



# Continuous Casting

Molten metal fed into casting machine

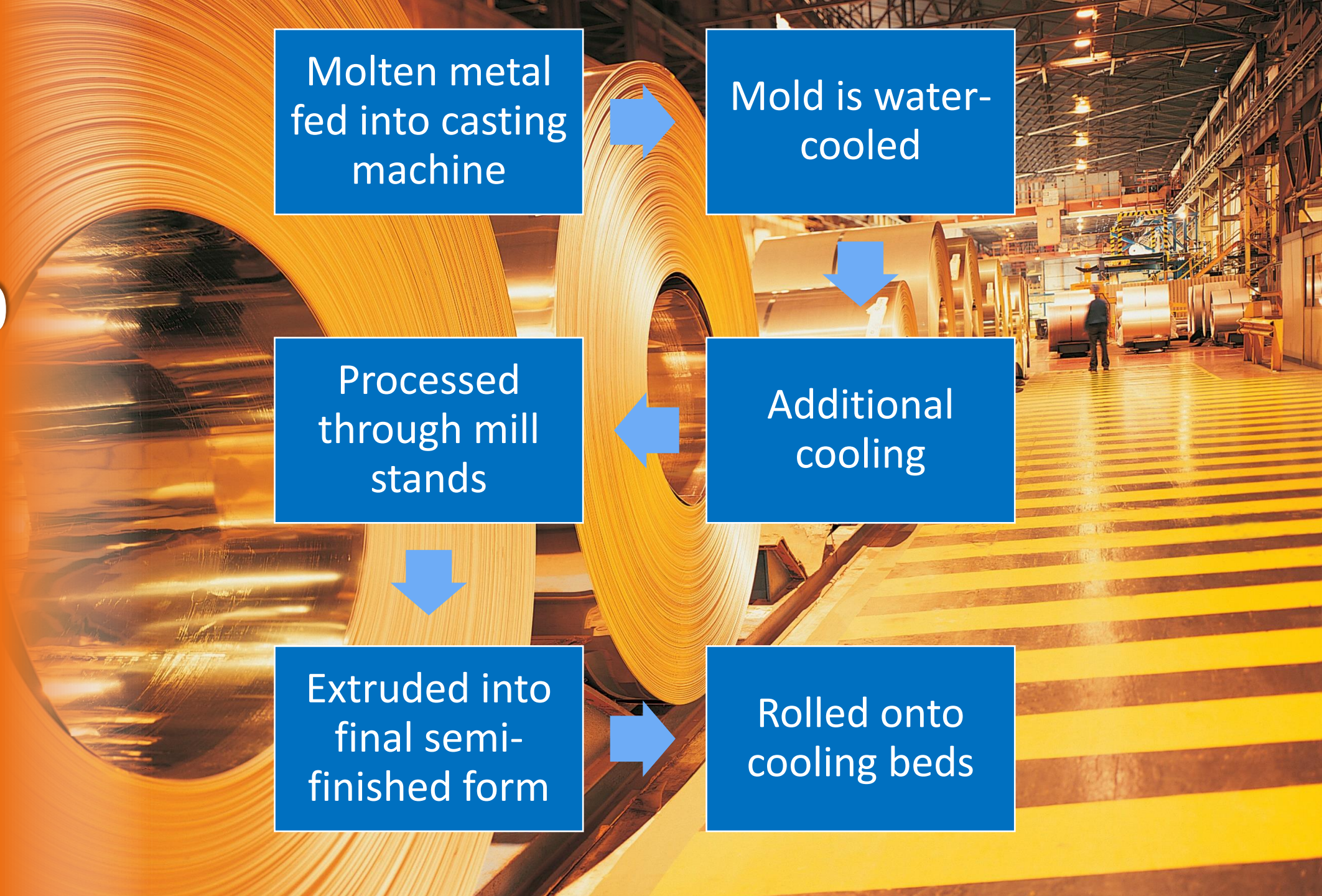
Mold is water-cooled

Processed through mill stands

Additional cooling

Extruded into final semi-finished form

Rolled onto cooling beds









# Selling to the Steel Industry





# Preparation

*"I represent one of the largest and most well-established grease manufacturers in America, with CITGO Lubricants and their Mystik line of greases. They have proven products that are dedicated to the steel industry and can provide references for steel industry success. I'd like to present just this product that will work to create savings for you. Can we meet so I can learn about your team, and create a winning proposal?"*

# Pre-Contact Preparation

What are they producing?

What is the volume of production?

How many associates are working there?

**LinkedIn**

**CITGO  
SAM**

**Industry Web Site**

- American Iron and Steel Institute
- World Steel Association
- Association for Iron and Steel Technologies



# Understanding the Pain Points

“We expect the best pricing, the best products and the best service.”

“I need to learn more about your operation before I can tell you how I can make you the most profitable through all 3 of those; the pricing, the products and the service.”





# Questions to Ask

How do you manage lubrication in regards to downtime and shutdowns?

Do you have a large crew that can handle multiple areas and lubrication needs?

When was the last time you had proper lubricant training?

Have you ever had a mill water study done?

Do you feel comfortable reading an oil analysis report?

How often, and by what means, do you conduct gear inspections?



# Accountability Through Set & Dated Meetings

What unexpected  
disruptions did you  
have this month?



How did the  
samples look?



Did we turn the  
inventory well?



Any new associates  
we need to get up  
to speed?



How did our  
delivery associates  
perform?



Any new projects  
regarding  
profitability  
underway?



At the next  
shutdown, do we  
need to get some of  
my team in here?



# Reliability

Lube Room  
Cataloging

Department  
Handling

Solutions



# Be Prepared



Source: Mother of all cobbles at steel mill\_Misroll cause horrible cobble at steel industry in Pakistan (YouTube)



# Steel News You Can Use

North America/Mergers & Acquisitions

## BIDEN WEIGHS IN ON U. S. STEEL ACQUISITION

"U. S. Steel has been an iconic American steel company for more than a century, and it is vital for it to remain an American steel company that is domestically owned and operated," the president said on Thursday. [Read More](#)

>>See Also: [USW Reports on Nippon Steel Meeting](#)

OPINION REVIEW & OUTLOOK [Follow](#)

## Biden's Nippon Steel Fiasco

The President opposes the Japanese firm's purchase of U.S. Steel under pressure from unions and Donald Trump, which will hurt America.

WORLD | CHINA

## Flood of Cheap Chinese Steel Fuels Global Backlash

The country's exports have shot up as its property-market downturn left producers with a surplus of the metal

**Mystik® JT-6® Synthetic 220 #2 Grease**  
[View more items in AGRICULTURE >](#)

Description


Mystik JT-6 Synthetic 220 #2 Grease is a high-temperature, full-synthetic, lithium-complex grease that combines excellent multi-purpose properties with a high dropping point and low-temperature pumpability that provides a wide operating temperature range. This product provides superior protection in heavily-loaded industrial, mining and construction applications.

To order packaging options not available for purchase online, please [click here](#) to find a distributor or [contact us](#).

PI Sheet: [English](#)

SDS Sheet: [English](#) [Spanish](#)

CA Residents: ⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](#)



United States Steel

# LET US PROVE IT



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LUBRICANTS



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April 2022

STEPHEN M. R.  
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with Rebecca R. Merrill



# Where Lubricants Are Used in a Steel Mill





# What Gets Lubricated?

## R&O

- Roll necks
- Journals
- Roll bearings
- Drainpipes
- Bearing housings
- Reservoir ceilings

## Gear Oils

- Roll stands
- Shears
- Cooling beds



## Fire-Resistant Hydraulic Fluids

- Oven doors
- Pushers
- Coilers
- Shears
- Cylinders

## Greases

- Caster rollers
- Roll bearings
- Conveyor bearings
- Electric motors
- Couplings
- Mobile equipment



# Steel Industry Grease

  
**Mystik**  
LUBRICANTS





# Mystik® LithoPlex® Industrial Greases

(Formerly known as Lithoplex ST Greases)

LithoPlex Industrial Greases are high-temperature greases with exceptional water resistance and stability which is critical in many primary and secondary mill applications.

They are industry tested to withstand extreme pressure, high shock loads and corrosive environments in mills.

The special lithium complex formula retains its consistency even in the most severe service.

Their ISO 460 base oils provide good load and wear protection.

They are highly recommended for use in rolling mills, work rolls, strip mills, conveyor bearings and drive u-joints.





# Mystik® JT-6® Synthetic 100 #1



A full synthetic lithium complex grease that combines excellent multi-purpose properties with a high dropping point.

It provides superior wear control, extreme pressure (EP) performance and water resistance.

This grease provides outstanding corrosion protection in the corrosive environments found in mills.

The ISO 100 base oils and NLGI #1 consistency allow for exceptional pumpability in centralized lubrication systems.

They have seen use in rolling mills, work rolls, strip mills and conveyor bearings.

# Mystik<sup>®</sup> JT-6<sup>®</sup> Synthetic 220 #2

A full synthetic lithium complex grease that combines excellent multi-purpose properties with oxidation control and a high dropping point.

This grease provides outstanding corrosion protection in the corrosive environments found in mills.

It provides superior wear control, extreme pressure (EP) performance and water resistance.

In addition to its high temperature performance, it exhibits outstanding low temperature performance and pumpability.

They are highly recommended for use in rolling mills, work rolls, strip mills, conveyor bearings and drive u-joints.







# Mystik® JT-6® Synthetic 460 Greases

The Mystik JT-6 Synthetic 460 #1 and #2 are fully synthetic lithium complex greases that are additized to provide superior extreme pressure (EP) and anti-wear characteristics and inhibited to resist oxidation and corrosion.

The high viscosity index ISO 460 base oils provide stable viscosity over a wide temperature range while maintaining excellent low temperature pumpability.

They have excellent Water Spray Off performance and provide outstanding corrosion protection in the most corrosive environments.

# Mystik® JT-6® Synthetic Electric Motor Grease

This is a premium quality lithium complex that is optimized for performance in electric motor applications that can be found throughout steel mills.

It provides outstanding wear protection, oxidation resistance and rust protection.

It also protects against corrosion in yellow metals such as the copper and brass found in electric motors.

This product is formulated with ISO 100 synthetic base oils.





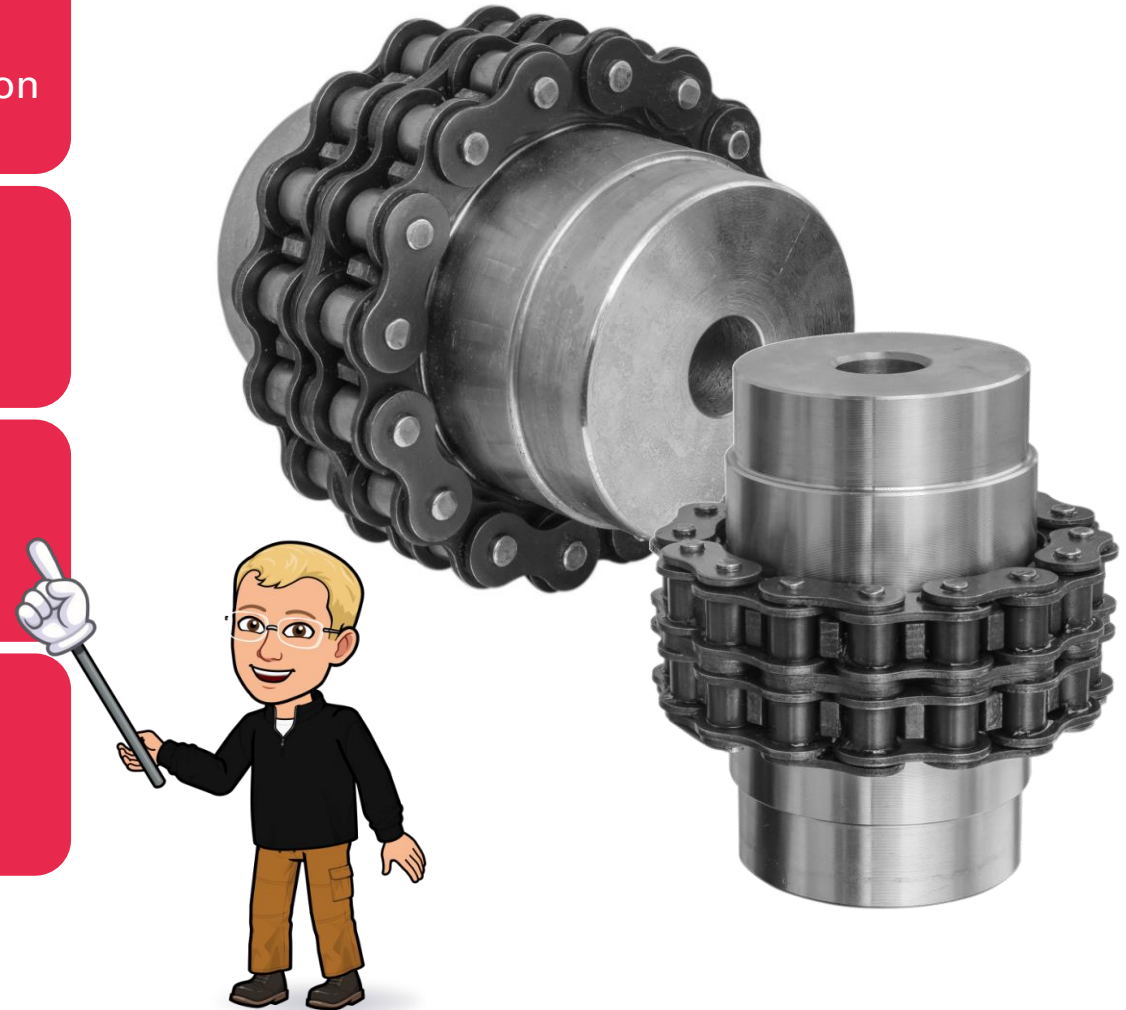
# Mystik<sup>®</sup> High Speed Coupling Grease

This grease is specially formulated with a lithium/polymer thickener in premium high viscosity base oils to provide excellent resistance to oil separation in high-speed grease lubricated couplings.

The high-viscosity base oils provide outstanding load-carrying capability.

Mystik High Speed Coupling Grease meets or exceeds the requirements of AGMA CG-1, CG-2 and CG-3 type coupling greases.

It is recommended for grease lubricated couplings including gear couplings, grid couplings and flexible chain couplings.





# **Steel Industry Fluids**



# Challenges

High  
Temperatures

High  
Pressures

Water

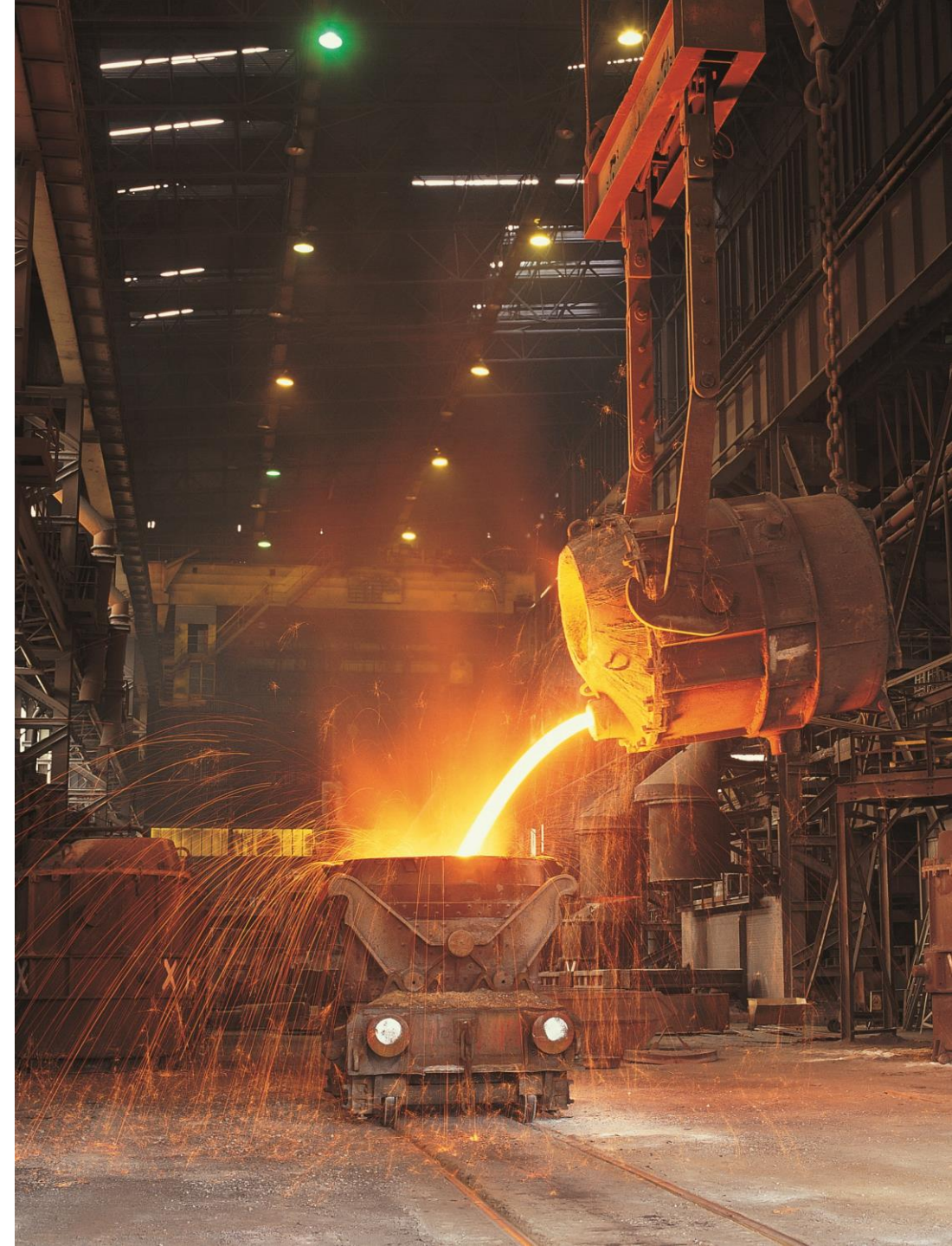
Rust &  
Corrosion

Maintaining  
Demulsibility

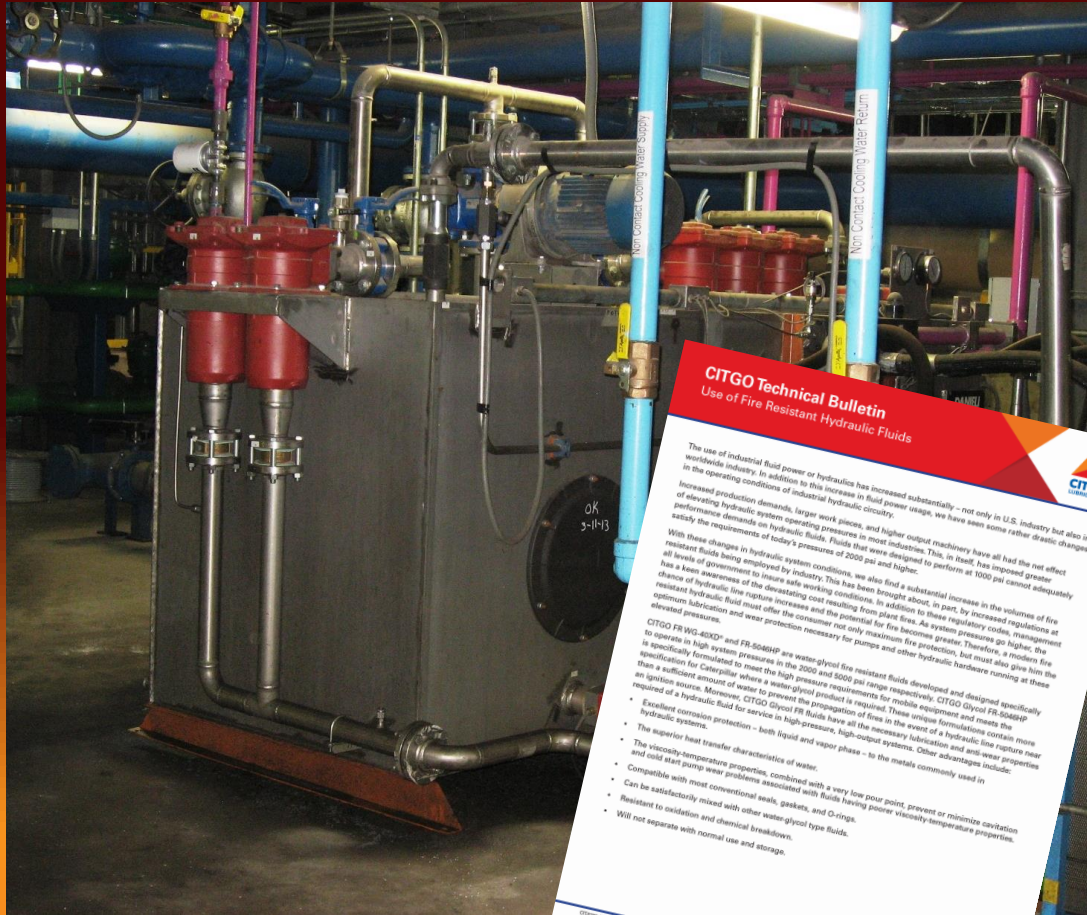
Foaming

Air  
Entrainment

Bacterial  
Growth



# Fire-Resistant Hydraulic Fluids



## FR WG-40XD & FR-5046HP

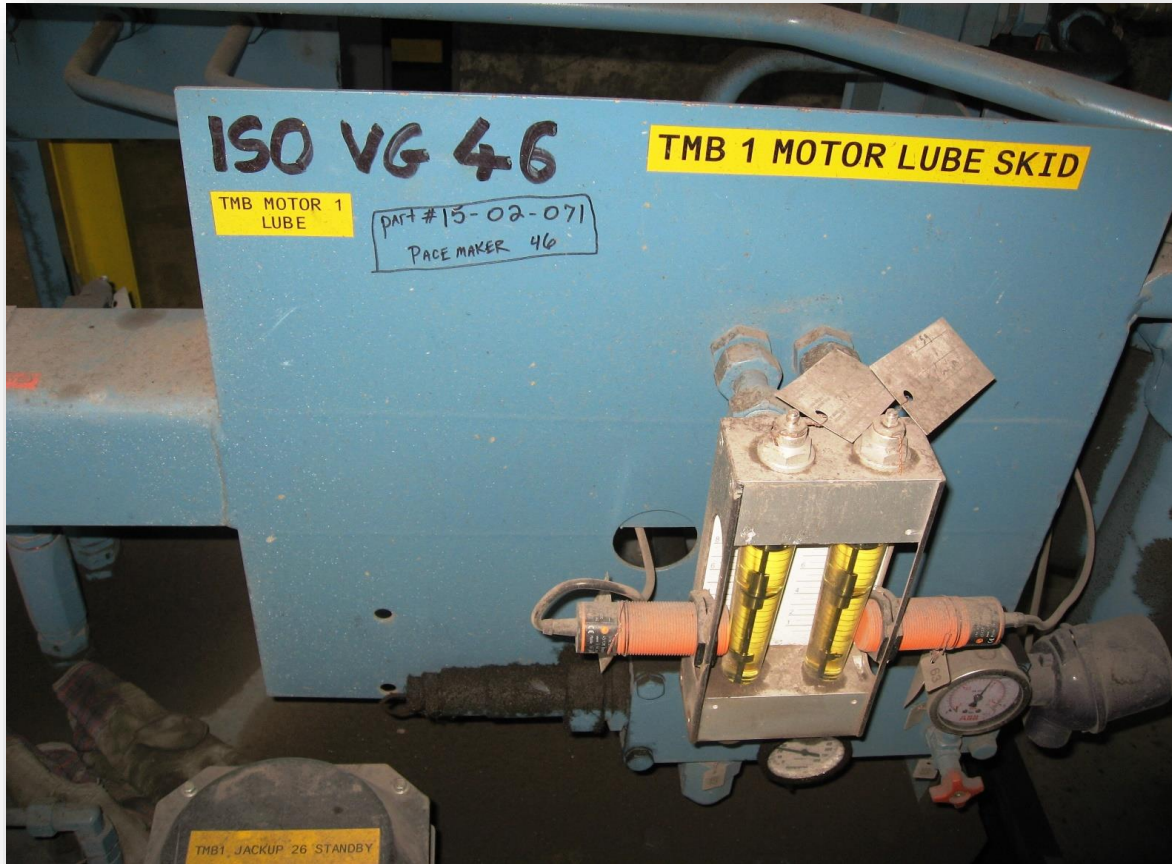
- Water-glycol product minimizes fire risk vs mineral oil and provides high VI (WG-40XD: 180; HP product 210)
- FR WG-40XD up to 2000psi; FR-5046HP addresses equipment operating up to 5000psi
- Use in mobile and stationary equipment within the mill

## Converting from another type of hydraulic fluid:

- Check compatibility with pumps and seals
- Drain, clean & flush equipment
- Refer to CITGO Technical Bulletin: Use of Fire-Resistant Hydraulic Fluids for full procedure



# Circulating/R&O Oils



## CITGEAR XCO

- Designed for high-speed rod mills; ISO 100 formulated for Nucor Darlington
- Recommended for use in Danieli and Morgan high-speed rod mill equipment
- ISO grades 100-460

## Pacemaker SD

- Designed to exceed Siemens AG requirements for Morgoil Advanced Bearing Lubricant 'Super Demulsibility' specification
- Rapid separation of water, especially suitable for industrial environments with contaminated water

# Gear Oils

## EP Gear Oils:

- EP Compound
- CITGEAR Synthetic EP

## Non-EP Gear Oils:

- CITGEAR XCO
- Cylinder Oil
- CITGEAR Synthetic HT
- CITGEAR Synthetic PAG





# **CITGO<sup>®</sup> CompKleen<sup>®</sup> Synthetic Cleaner**



# Questions?



Please post your  
questions using the  
Q&A function.



**For technical inquiries or issues:**  
Lubes Answer Line 800-248-4684  
[lubeshelp@citgo.com](mailto:lubeshelp@citgo.com)





# Thank You!

See you next time!

