A clean forge is expensive

The cost trap of colorless lubricants

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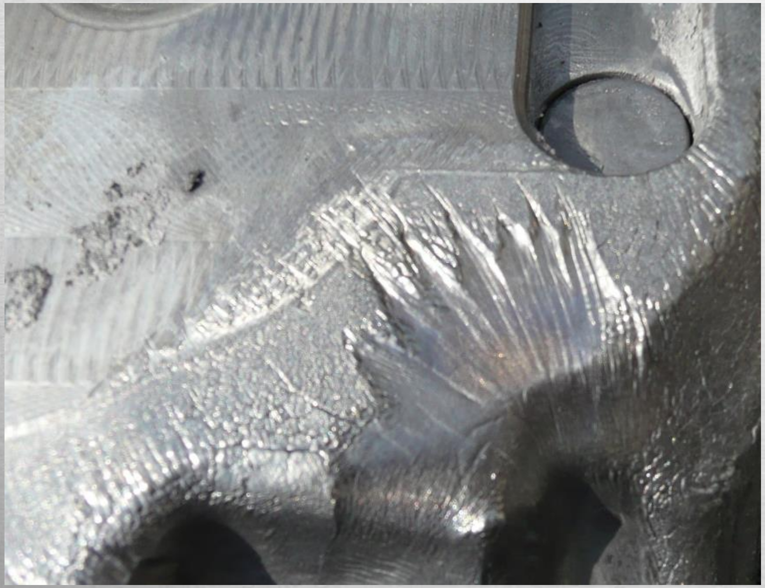
Comparison Graphite and colorless Lubricants

Function	Graphite	Polymer/ colorless
Lubrication / releasing	1	3
Tool wear	1	3
Use for deep gravities	1	4
For high temperature gravities	1	2
Handling and safety	3	2
Stability, storage	3	1
Cleanliness	4	1
Environmental behavior	2	3
Working place safety	1	3
Economics	2	3

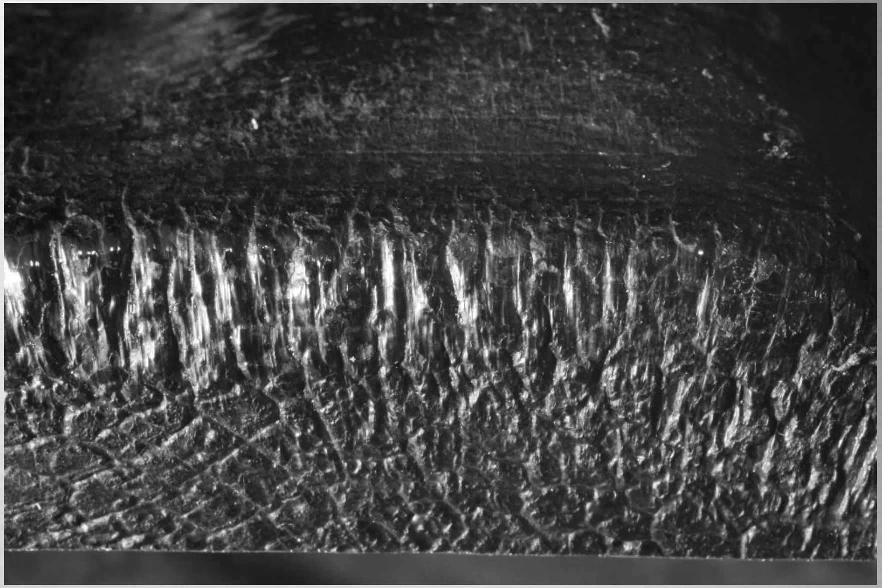
1= very good ; 2= good; 3= accepatble; 4 = bad

Cause of failures because of polymer lubricants

Increased tool wear due to missing lubrication

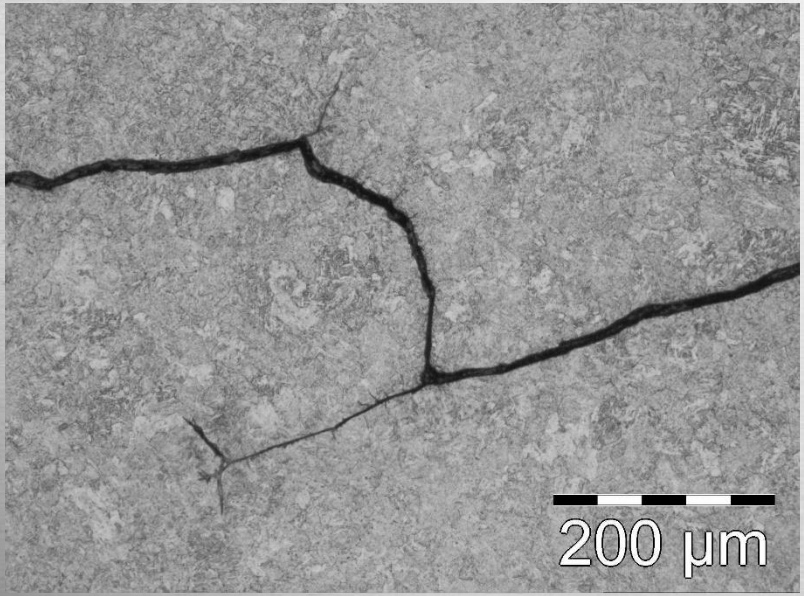


Increased tool wear due to corrosion and Decomposition of polymers

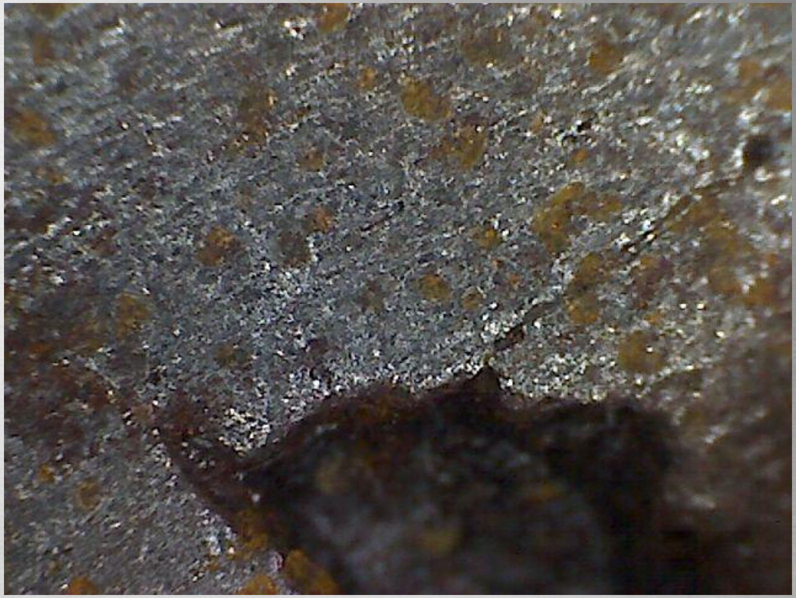


Cause of failures because of polymer lubricants

Cracks because of higher billet temperature der Billets (higher induction furnace temp. to Get a better steel flow)



Broken edges due to reduced pressure Resistance of polymer lube.



Responds from customers

- Tool life and less workpieces are the biggest disadvantages of polymer lubes. Workpieces quantity and tool life can be extended up to 40% using graphite lubes (depending on geometrical shape of the workpiece)
- Total failures of gravities (thermal- or fatigues cracks, broken edges) are approx.. 8% higher using polymer lubes.
- Because of the reduced flowing behavior and lubrication the billet temperature should be up to 100°C increased. This caused around 10 % more electrical power consumption.
- Reduction of press forces up to 30% using graphite lubricants. Additional increased productivity and reduced maintenance.
- No sticker and reduced press down time due to graphite lubricants.
- Reduced scrap an rework, improved part quality in comparison to polymer lubes.

What is commonly unknown.

- Wastewater treatment of polymer lubricants based on polycarboxylic acids is more difficult compared with graphite lubricants..
- Colorless products must be safe. This is a myth.
- Polymer lubricants causes risky decomposition compounds during hot forging.
- Graphite is an old and save material. Graphite is considered to be harmless because it is experienced for many decades.
- Most of polymer lubricants contain sodium hydroxide or other highly alkaline chemicals. In concentrated state (if water is evaporated) may cause injury. For example when cleaning the dies.
- Graphite has the highest compressibility. In case of high deformation forces (complicated parts) polymer lubricants fails or cause excessive wear.
- Due to optimized spraying units and modified behavior of the staff a cleen forging shop with graphite lubricants is possible. möglich. Additional considerable cost savings.

Our basic principle:
As much chemistry as necessary,
as few chemistry as possible

- All ingredients in accordance with the corresponding regulations
- No toxic decomposition compounds
- Odorless
- Wastewater bio degradable

Good Chemistry at work

We are happy to assist you.

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