



ENVIRONMENTALLY-FRIENDLY
LUBRICANTS FOR INDUSTRY

LMI GREEN LUBRICANTS TECHNOLOGY



WHY GREEN? ENVIRONMENTAL IMPACT OF LUBRICANTS

A HIGH PERCENTAGE OF APPROXIMATELY 5 M TONS PER YEAR OF USED INDUSTRIAL LUBRICANTS IN EUROPE END UP POLLUTING THE ENVIRONMENT THROUGH:

- RESIDUAL OILS IN EMPTY DRUMS
- OIL FILTERS
- SPILLAGES DURING TOPPING-UP
- LEAKS
- DRIPS
- ACCIDENTAL LOSSES
- EMISSIONS IN AIR
- CONTAMINATION OF SCRAPS
- CONTAMINATION OF CLEANING MATERIALS AND TISSUES



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WHY GREEN? LEGISLATION DEVELOPMENTS

THE ISSUE OF ENVIRONMENTAL POLLUTION OF LUBRICANTS HAS BEEN REFLECTED BY EUROPEAN LEGISLATION AND RECOMMENDATIONS THAT AIM TO MINIMIZE ENVIRONMENTAL POLLUTION:

- WATER PROTECTION LAWS
- SOIL PROTECTION LAWS
- CHEMICAL REGULATION LAWS
- ENVIRONMENTAL LIABILITY LAWS

AND ENVIRONMENTAL LEGISLATION HAS ECONOMIC AND LEGAL REPERCUSSIONS FOR OILS CONSUMING INDUSTRIES, WHICH DEPEND ON THE LEVEL OF HAZARD AND RISK OF THE EMPLOYED OILS:

- COSTS OF STORING AND APPLICATION OF POLLUTING OILS
- COSTS FOR DISPOSAL OF POLLUTED WASTE
- COSTS FOR CLEAN-UP IN CASE OF ENVIRONMENTAL POLLUTION
- CAUSER IS LIABLE OF POLLUTION REGARDLESS OF BLAME
- LIABILITY ON SUSPICION



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LMI GREEN OILS FOR THE ENVIRONMENT PROTECTION



Highly biodegradable according to OECD301B: > 60% within 28 days

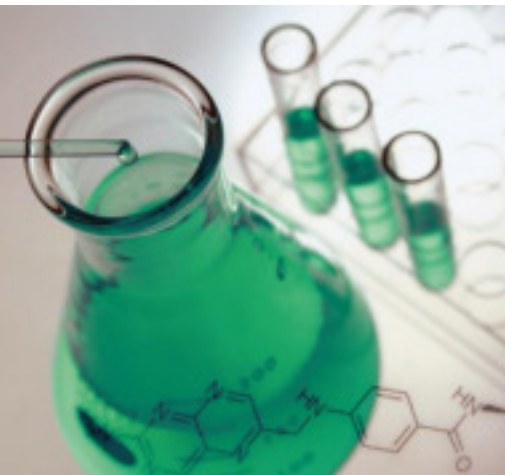
Reduced Water pollution:

Water Hazard Class 0/1 (not or slightly hazardous)

Improved Waste classification: any contamination by our oils does not cause the waste to become dangerous.

For example:

- **Degreasing residues:** 11.01.14 (not dangerous) if contaminated by LMI green oils
- **Degreasing residues:** 11.01.13 (dangerous) if contaminated by oils with danger substances
- **Filters, clothing, rags:** 15.02.03 (not dangerous) if contaminated by LMI green oils
- **Filters, clothing, rags:** 15.02.03 (dangerous) if contaminated by oils with danger substances



LMI GREEN LUBRICANTS TECHNOLOGY



**LMI IS SPECIALIZED SINCE 1990
IN THE FORMULATION AND PRODUCTION
OF GREEN LUBRICANTS
FOR THE COLD DEFORMATION OF METALS**

**OUR VEGETABLE OIL BASED LUBRICANTS ARE OBTAINED FROM NATURAL
VEGETABLE ESTERS AND ARE THEREFORE CHARACTERIZED BY:**

Low Environmental Impact

Renewable sources origin

Biodegradability

High Hygenic-sanitary compatibility

High lubrication and cooling capacity

LMI GREEN LUBRICANTS TECHNOLOGY



LMI VEGETABLE LUBRICANTS VS MINERAL OILS

CHARACTERISTIC	MINERAL OILS	LMI VEGETABLE OILS
FLASH POINT	120 - 240°C	+ 25 TO 40%
SMOKE POINT	80 - 160°C	+ 40%
VOLATILITY (TGA) % (1)	5 TO 50%	- 30%
BIODEGRADABILITY (2)	LOW (<40%)	HIGH (>60%)
WATER HAZARD CLASS	> = 1	< = 1
EXPOSURE LIMIT TVL mg/m3 (3)	1 TO 5	NO LIMIT
AROMATIC, NAFTENIC, PAH, PNA (4)	YES	NO
EP-AW PROPERTIES (5)	LOW	GOOD

(1) Thermogravimetric analysis

(2) According to OECD301B

(3) Threshold value limit, according to ACGIH American Conference of Governmental Industrial Hygienists

(4) Polycyclic aromatic hydrocarbons, polynuclear aromatics

(5) Extreme Pressure – Anti Wearing

LMI GREEN LUBRICANTS TECHNOLOGY



MAIN HEALTH AND ENVIRONMENTAL ADVANTAGES BY USING LMI LUBRICANTS

OUR BRAND



NO FLAME RISK!

NO SMOKE IN THE PLANT

NO NEED TO MONITOR THE EXPOSURE LIMITS OF THE WORKERS

GUARANTEE OF NO EXPOSURE TO SUBSTANCES OF VERY HIGH CONCERN

AMBIENT RISK REDUCTION IN CASE OF PRODUCT DISPERSION



CASE STUDY

METAL STAMPING for **AUTOMOTIVE** and **HOUSEHOLD APPLIANCE INDUSTRY**

RESULTS BY REPLACING MINERAL OIL WITH LMI <<GREEN>> LUBRICANT

NO MORE SKIN AND EYE IRRITATION FOR THE PRESS OPERATORS

NO MORE SMOKE GENERATED IN THE HEAVY STAMPING PROCESSES

NO BLACK SPOTS AT THE WELDING PROCESS

FASTER AND EASIER TO REMOVE IN THE CLEANING PROCESS

30% LESS USAGE THANKS TO HIGHER LUBRICATION PROPERTIES

LONGER LIFE OF COATED PUNCHES

20% LESS IN APPLIED COST





METAL STAMPING for **AUTOMOTIVE** and **HOUSEHOLD APPLIANCE INDUSTRY**

OUR PRODUCTS



WATER BASED EMULSION

CB BASE 100 G	CB 801 G
CB 021	CB 01 DG
CB 051	CB 02 DG
CB 101	
CB 201	
CB 301	



METAL STAMPING for **AUTOMOTIVE** and **HOUSEHOLD APPLIANCE INDUSTRY**

OUR PRODUCTS



NEAT LUBRICANTS

CB I 20 PB	CB I 32/40 A
CB I 40 PB	CB I 125 TF
CB I 100 PB	
CB I 180 PB	
CB I 180 PB PLUS	
CB I 300 PB	



OUR PRODUCTS



METAL STAMPING for **AUTOMOTIVE** and **HOUSEHOLD APPLIANCE INDUSTRY**

FOOD GRADE LUBRICANTS

CB 80 AL
3H
NSF Registration N° 158530



KOSHER Certificate



CB I 70 AL
H1, 3H
NSF Registration N° 141580





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