SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

febi 02615 hydraulic fluid ZH-M
Article number 82615, 71615, 02615

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant uses

Hydraulics oil

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Ferdinand Bilstein GmbH + Co. KG
Wilhelmstr. 47
58256 Ennepetal / GERMANY
Phone +49 2333 911-0
Fax +49 2333 911-444
Homepage www.febi.com
E-mail info@febi.com

Address enquiries to

Technical information info@febi.com

Safety Data Sheet info@febi.com

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (english)

Company +49 2333 911-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Asp. Tox. 1: H304 May be fatal if swallowed and enters airways.

2.2 Label elements

The product does not require a hazard warning label in accordance with EC-directives.

Hazard pictograms

Signal word DANGER

Contains: Distillates (petroleum), hydrotreated light naphthenic

Hazard statements H304 May be fatal if swallowed and enters airways.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor.
P331 Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents / container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards

Human health dangers If swallowed or in the event of vomiting, risk of product entering the lungs.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards No particular hazards known.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
50 - < 100	Distillates (petroleum), hydrotreated light naphthenic
	CAS: 64742-53-6, EINECS/ELINCS: 265-156-6, EU-INDEX: 649-466-00-2, Reg-No.: 01-2119480375-34
	GHS/CLP: Asp. Tox. 1: H304
0,1 - < 1	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)
	CAS: 4259-15-8, EINECS/ELINCS: 224-235-5, Reg-No.: 01-2119493635-27
	GHS/CLP: Eye Dam. 1: H318 - Aquatic Chronic 2: H411

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek for medical treatment.

Skin contact When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Seek medical advice immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
If swallowed or in the event of vomiting, risk of product entering the lungs.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Foam, dry powder, water spray jet, carbon dioxide.

Extinguishing media that must not be used Full water jet.

5.2 Special hazards arising from the substance or mixture

Not combusted hydrocarbons.
Risk of formation of toxic pyrolysis products.
Carbon monoxide (CO)

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.

Cool containers at risk with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

High risk of slipping due to leakage/spillage of product.
Forms slippery surfaces with water.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid formation of aerosols.

Do not eat, drink or smoke when using this product.
Use barrier skin cream.
Wash hands before breaks and after work.
Cloths contaminated with product should not be kept in trouser pockets.
Contaminated work clothing should not be allowed out of the workplace.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Keep container tightly closed.
Keep container in a well-ventilated place.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

Ingredients with occupational exposure limits to be monitored (GB)

8.1 Control parameters

not applicable

DNEL

Range [%]	Substance
50 - < 100	Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
	Industrial, inhalative, Long-term - local effects: 5,4 mg/m³.
0,1 - < 1	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
	Industrial, inhalative, Long-term - systemic effects: 6,6 mg/m³.
	Industrial, dermal, Long-term - systemic effects: 9,6 mg/kg bw/d.
	general population, oral, Long-term - systemic effects: 0,19 mg/kg bw/d.
	general population, dermal, Long-term - systemic effects: 4,8 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 1,67 mg/m³.

PNEC

Range [%]	Substance
0,1 - < 1	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
	oral (food), 8,33 mg/kg food.
	soil, 0,0548 mg/kg dw.
	sediment (seaater), 0,00701 mg/kg dw.
	sediment (freshwater), 0,0701 mg/kg dw.
	sewage treatment plants (STP), 3,8 mg/l.
	seawater, 4,6 µg/l.
	freshwater, 4 µg/l.

8.2 Exposure controls

Additional advice on system design
Ensure adequate ventilation on workstation.

Eye protection
Safety glasses.

Hand protection
The details concerned are recommendations. Please contact the glove supplier for further information.
> 0,4 mm: Nitrile rubber, >480 min (EN 374).
> 0,4 mm: Neoprene, >480 min (EN 374).

Skin protection
Light protective clothing.

Other
Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier.
Avoid contact with eyes and skin.

Respiratory protection
Breathing apparatus in the event of aerosol or mist formation.
Short term: filter apparatus, combination filter A-P1.

Thermal hazards
No information available.

Delimitation and monitoring of the environmental exposition
See SECTION 6+7.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	light yellow
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not determined
Flash point [°C]	152 (Iso 2592)
Flammability (solid, gas) [°C]	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	0,87 (DIN 51757) (15 °C / 59,0 °F)
Bulk density [kg/m³]	not applicable
Solubility in water	immiscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	17,1 mm²/s (40°C) (DIN 51562)
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not applicable
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
50 - < 100	Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
	LD50, dermal, Rabbit: > 2000 mg/kg bw.
	LD50, oral, Rat: > 5000 mg/kg bw.
	LC50, inhalative, Rat: > 5,53 mg/l/4h (dust/mist).
0,1 - < 1	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
	LD50, dermal, Rabbit: > 5000 mg/kg bw (OECD 402).
	LD50, oral, Rat: > 3100 mg/kg bw (OECD 401).

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	
	No classification on the basis of the calculation procedure of the preparation directive. Toxicological data of complete product are not available.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
50 - < 100	Distillates (petroleum), hydrotreated light naphthenic, CAS: 64742-53-6
	LC50, (96h), fish: > 100 mg/l.
	IC50, (48h), Algae: > 100 mg/l.
0,1 - < 1	Zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate), CAS: 4259-15-8
	LC50, (96h), Oncorhynchus mykiss: 1 - 10 mg/l.
	EC50, (72h), Desmodesmus subspicatus: > 240 mg/l.
	EC50, (48h), Daphnia magna: 1 - 10 mg/l (OECD 202).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive.
Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment or into the drainage.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Coordinate disposal with the authorities if necessary.
Disposal in an incineration plant in accordance with the regulations of the local authorities.
In according to RoHS!

Waste no. (recommended) 130110*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110*
150102
150104

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID	NO DANGEROUS GOODS
Inland navigation (ADN)	NO DANGEROUS GOODS
Marine transport in accordance with IMDG	NOT CLASSIFIED AS "DANGEROUS GOODS"
Air transport in accordance with IATA	NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	0%

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H304 May be fatal if swallowed and enters airways.
H411 Toxic to aquatic life with long lasting effects.
H318 Causes serious eye damage.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure	Asp. Tox. 1: H304 May be fatal if swallowed and enters airways. (On basis of test data)
Modified position	SECTION 2 been added: Distillates (petroleum), hydrotreated light naphthenic
	SECTION 3 been added: Distillates (petroleum), hydrotreated light naphthenic
	SECTION 2 been added: H304 May be fatal if swallowed and enters airways.
	SECTION 2 been added: Asp. Tox. 1
	SECTION 16 been added: Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.