Material Safety Data Sheet

AAA QUENCH OIL

SECTION I - IDENTIFICATION

24 HOUR EMERGENCY ASSISTANCE:
413-452-2000 (Eastern Time) 8:00AM-5:00PM
800-424-9300 (OFF HOURS) CHEMTREC
703-527-3887 CHEMTREC INTERNATIONAL

HMIS HEALTH ..... 1 (*=Chronic Hazard)
HMIS FLAMMABILITY 1
HMIS REACTIVITY 0
HMIS PROTECTION ..... X (See Section 8)

HEATBATH CORPORATION

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INDIAN ORCHARD, MASS. 01151

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INFORMATION: 413-452-2000
DATE REVISED: 02/25/08 Rev3

PRODUCT NAME: ..... AAA QUENCH OIL

DESCRIPTION..... Heat treating quench oil.

SECTION II - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENT	CAS #	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
OIL (mist)	64742-58-1	5	5

N.E.=NOT ESTABLISHED **N.A.=NOT APPLICABLE** **T.S.=TRADE SECRET**

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

SECTION III - PHYSICAL DATA

BOILING POINT: ..... N.E.
VAPOR PRESSURE: ..... N.E.
VAPOR DENSITY (AIR=1): ..... N.E.
SOLUBILITY IN WATER: ..... insoluble.
APPEARANCE:..... amber color liquid, oil odor.

SPECIFIC GRAVITY (H2O=1): 0.86
MELTING POINT: ..... N.A.
EVAPORATION RATE: ..... N.E.
pH: ..... N.A.

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: ..... 340 °F
LOWER FLAME LIMIT..... N.E.

FLAMMABLE LIMITS: ..... N.E.
HIGHER FLAME LIMIT ..... N.E.

IN CASE OF FIRE: Petroleum product-use dry chemical, carbon dioxide or alcohol foam. Wear protective clothing with self-contained breathing apparatus.
UNUSUAL FIRE HAZARDS: May release flammable vapors when exposed to extreme heat. Cool exposed containers with water.

SECTION V - REACTIVITY DATA

CHEMICAL STABILITY: ..... STABLE
CONDITIONS TO AVOID: ..... temps >340 °F
INCOMPATIBILE MATERIALS: ..... strong oxidizers.
DECOMPOSITION PRODUCTS: ..... carbon dioxide, carbon monoxide, various hydrocarbons under thermal decomposition.
HAZARDOUS POLYMERIZATION: ..... WILL NOT OCCUR

SECTION VI - HEALTH DATA

ROUTES OF ENTRY: ..... eye/skin contact, inhalation, ingestion.

EMERGENCY OVERVIEW:

May be harmful if swallowed. Aspiration of material into the lung may occur during swallowing or vomiting resulting in lung damage. May cause eye, skin and respiratory tract irritation. Prolonged or repeated exposure to mist may cause lung injury.

ACUTE EFFECTS OF OVEREXPOSURE:

EYE CONTACT: ..... May cause irritation, redness, itching, and pain.

SKIN CONTACT..... May cause irritation. Prolonged or repeated contact may cause dermatitis.

INHALATION: ..... Inhalation of vapor or mist may cause respiratory tract irritation. Prolonged or repeated inhalation may cause lung injury.

INGESTION: ..... May cause irritation, nausea, vomiting and diarrhea. Aspiration into the lungs may chemical pneumotitis or lung injury.

CHRONIC EFFECTS OF OVEREXPOSRE: Prolonged inhalation of vapor or mist may cause oil pneumonia, lung tissue inflammation, and/or fibrous tissue formation.

CARCINOGENICITY: None. **NTP?:** No. **IARC?:** No. **OSHA?:** No.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May aggravate pre-existing respiratory tract and skin disorders.

ADDITIONAL TOXICITY INFORMATION: No information available.

FIRST AID: INHALATION: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. EYES: Hold eyelids apart and flush with running water for at least 15 minutes. Get medical attention. SKIN: Wash affected area with soap and water. Remove contaminated clothing. If irritation persists, see a physician. INGESTION: Do not induce vomiting. Get medical attention. Aspiration of material into the lungs due to vomiting may cause chemical pneumonitis.

SECTION VII – PRECAUTIONS / PROCEDURES

IN CASE OF SPILL: Eliminate all sources of ignition. Contain spills with inert absorbant. Sweep up or vacuum into a chemical waste container. Flush area with water.

WASTE DISPOSAL METHOD: Dispose in accordance with federal, state and local regulations. Under the Resource Conservation and Recovery Act (RCRA) regulations, it is the responsibility of the product user to determine, at the time of disposal, whether a material should be classified as a hazardous waste.

PRECAUTIONS: Use with adequate ventilation. Avoid contact with eyes, skin or clothing. Wear proper protective clothing when using this product. Wash thoroughly after handling. Store away from extreme heat and open flame.

OTHER PRECAUTIONS: Avoid water contamination. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

SECTION VIII – SPECIAL PROTECTION

VENTILATION: ..... maintain below PEL & TLV limits.
MECHANICAL EXHAUST ..... use as required to maintain a well-ventilated area.
LOCAL EXHAUST ..... use as required to maintain a well ventilated area.
RESPIRATORY PROTECTION: ..... use NIOSH/OSHA approved respirator if dust, fumes or vapors are excessive.
PROTECTIVE GLOVES: ..... oil resistant.
EYE PROTECTION: ..... safety goggles and/or face shield.
OTHER PROTECTIVE EQUIPMENT ... apron, boots, full cover work clothes. eye wash and emergency shower.
WORK/HYGIENIC PRACTICES ..... wash thoroughly after handling, launder clothes.

SECTION IX – REGULATORY INFORMATION

D.O.T. SHIPPING DESCRIPTION: OIL, LUBRICATING N.O.I., NON D.O.T. REGULATED.

SARA 311/312 HAZARDS:

Immediate (Acute) ..... True
Chronic* ..... True
Fire ..... False
Sudden Release-of-Pressure ..... False
Reactive ..... False

TSCA Status: All components within this product are listed on the TSCA Inventory.

* This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. Copying and redistribution of this MSDS must include this notification. Do not detach or separate this section from the above MSDS.

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	% by Wt.
No CERCLA or SARA 313 components	N.A.	N.A.	No	

MSDS Change History:
Rev1 Initial issue.
09/21/98 Rev2
02/25/08 Rev3 Format update (Sec. 1-9)

Park Metallurgical Corporation

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TECHNICAL DATA

AAA QUENCH OIL

CHARACTERISTICS:

AAA QUENCH OIL is designed to provide maximum cooling rates for austenitized steels. Its formulation guarantees good stability because the mineral base intensifier will not saponify, stratify, nor filter out. AAA QUENCH OIL can be used as a quench from any heating medium and is especially suitable for developing maximum oil-quenched hardnesses in medium and low alloy steels. It is widely used as a quenching medium for carbonitrided work where uniform quenching rates and clean, easily washed work are so important.

AAA QUENCH OIL achieves its faster cooling rates by an intensified action in the initial stages of quench cooling. Heat removal is rapid in this critical range where transformation to soft structures must be avoided. The quench oil provides slower cooling through the martensitic transformation range, (M_s-M_f), than other competitive oils do. This insures that the higher and deeper hardnesses produced are not accompanied by increased warpage and breakage. Testing demonstrates AAA QUENCH OIL's superior heat removal characteristics which often mean the difference between partial and complete hardening in actual practice.

Distortion in oil quenched parts is more often due to slow, non-uniform cooling than to fast, uniform quenching. This is due to the thermal variations and mixed microstructures which ordinary quenching oils produce. A fast uniform quench is especially important in batch-type carbonitriding furnaces so that all portions of the load are evenly hardened. The quenching rates and viscosity of AAA QUENCH OIL were designed to satisfy this requirement. Moreover, this quenching oil drains well and is easily washed from the work, where necessary. If left on, it provides a thin film of protection from rust.

You can use AAA QUENCH OIL with confidence. Your parts will achieve maximum oil quenched hardness with minimum distortion or breakage. AAA QUENCH OIL will produce exceptionally clean work when used in the recommended temperature range. No matter what the temperature or the austenitized medium, AAA QUENCH OIL will not saponify or separate, neither can the intensifiers be filtered out. The low viscosity maximizes uniformity of quench throughout a batch load and minimizes drag-out.

FORM:

Typical Properties

Appearance:	Light Amber Oil
Viscosity @ 100°F:	14.0 – 19.3 cSt
Hot Wire @ 140°F:	≥ 33 amps
Nickel Ball Time:	9 – 11 seconds
Flash Point:	≥ 340°F

EQUIPMENT:

All equipment for AAA QUENCH OIL baths may be constructed of mild steel.

OPERATION:

Bath Parameters

Temperature:	130 – 160°F (open tank operation) 100 – 130°F (vacuum operation) 200°F Max (under protective atmosphere)
Velocity:	≥ 100 FPM
Time:	As required for appropriate metallurgical transformation

CONTROL:

The quench speed of AAA QUENCH OIL should be monitored and maintained at ≥ 30 amps at 140°F as measured using a HOT WIRE MACHINE (available from Heatbath/Park Metallurgical). If quench speed becomes lower than 30 amps, a 5% addition of QUENCH OIL ACCELERATOR will restore the speed and reinforce the anti oxidizing compounds in the product. AAA QUENCH OIL may need centrifuging or filtering depending on sediment that is dragged in. Sediment level should be maintained at ≤ 0.5%. Absorption of furnace atmosphere can cause the flash point of AAA QUENCH OIL to lower resulting in poor quench characteristics and fire hazard. Should this occur de-gassing the oil at a temperature not to exceed 275°F will remove the contamination. All efforts should be made to avoid water contamination of AAA QUENCH OIL. Water will cause very erratic quench characteristics as well as posing a serious fire hazard.

Electrical immersion heaters used to raise the temperature of the oil should not exceed 10.0 watts per square inch, in a well agitated environment.

SAFETY:

Precautions should be taken to prevent eye contact with product, minimize skin contact and inhalation of vapor or mist.

As with any chemical, read the product label's health and protective measure information statements before using. **Consult the MSDS for full information on health effects and protective measures.** Utilize necessary protective equipment appropriate for the task at hand and potential exposure to the product being used. Whenever in doubt, STOP and consult with your supervisor before using/working with any chemical.

DISPOSAL:

Used quench oils should be removed by a qualified waste oil disposal service.

Under the Resource Conservation and Recovery Act (RCRA) regulations, it is the responsibility of the product user to determine, at the time of disposal, whether a material should be classified as a hazardous or non-hazardous waste.

NON-WARRANTY:

The data contained in this bulletin is believed by Heatbath/Park Metallurgical Corporation to be accurate, true and complete. Recommended parameters are based on a typical process and may be altered to accommodate specific requirements. Since, however, the final use of the product is beyond our control, no warranty of results is expressed or should be implied.