



MATERIAL SAFETY DATA SHEET

TRADE NAME: Kodiak Enhanced Perforating System Disks

(MSDS-KOD)

Section 1: Product and Company Identification

Product Name: Kodiak Enhanced Perforating System Disks
Synonyms: Kodiak Disks, Kodiak Pellets

Manufacturer: Owen Oil Tools
Division: N/A
Address: 12001 County Rd 1000, Godley TX 76044

Telephone: 800.333.6936
817.551.0540
817.551.0660

Transportation Emergency: 800.255.3924 (24 Hrs Chem-Tel)

Basic Description: Propellant
Articles, explosive, n.o.s.
UN0349, 1.4S

Product Use: Stimulation of oil and gas wells

Section 1 Notes: The Kodiak Enhanced Perforating System is an assembly of several products – this MSDS describes the propellant disks or pellets.

Prevention of Accidents in the Use of Explosives

The prevention of accidents in the use of explosives is a result of careful planning and observation of the best known practices. The explosives user must remember that he or she is dealing with powerful force and various devices and methods have been developed to assist in directing this force. You must realize that this force, if misdirected, may result in death or injury to you and your fellow workers.

Warning

All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as how to use any explosive product, do not use it before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he or she should consult the manufacturer before use.

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Section 2: Composition/Information on Ingredients

<u>Ingredient:</u>	<u>CAS No.</u>	<u>% Wt*</u>	<u>TLV</u>	<u>PEL</u>
Potassium perchlorate	7778-74-7	>50%	N/A	N/A
Aluminum	7429-90-5	<25%	N/A	N/A
Polytetrafluoroethylene	9002-84-0	<25%	N/A	N/A
Others	Non Hazardous			

*Exact Percentages – Proprietary.

N/A = Not Applicable

Section 3: Hazards Identification

- ◆ **Danger! Explosive!**
- ◆ Products are solid, individually wrapped disks. Protect against physical damage. Isolate from source of heat or ignition. Not compatible with acids, alkalis, or some organics.
- ◆ Does not present health hazards in normal handling; however, the products are Division 1.4 Explosives, and detonation may cause severe physical injury – including death.
- ◆ Do Not Remove Protective Wrapper
- ◆ Do Not Ingest
- ◆ Do Not Physically Alter Disks

Section 4: First Aid Measures

Eyes:	Not a likely route of exposure. Flush eyes with water.
Skin:	Not a likely route of exposure. Wash skin with soap and water.
Ingestion:	Not a likely route of exposure. Induce vomiting, seek prompt medial attention.
Inhalation:	Not a likely route of exposure. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek prompt medial attention
Injury From Detonation:	Seek prompt medical attention

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Section 5: Fire Fighting Measures

Flash Point: Non Flammable

Auto ignition Temperature: >400°F (>204°C)

Extinguishing Media: None

Special Fire Fighting Procedures:

Division 1.4S Explosives

- ◆ These products are Division 1.4S Explosives. Packages bearing the 1.4S label or packages containing material classified as 1.4S are designed or packaged in such a manner that when involved in a fire, may burn vigorously with localized detonations and projection of fragments.
- ◆ Effects are usually confined to immediate vicinity of packages.
- ◆ Try to keep the fire from reaching explosives.
- ◆ If fire threatens cargo area containing packages bearing the 1.4S label or packages containing material classified as 1.4S, consider isolating at least 15 meters (50 feet) in all directions. Fight fire with normal precautions from a reasonable distance.
- ◆ Isolate area. Guard against intruders. Evacuate personnel to a safe area.
- ◆ Consult the 2008 *Emergency Response Guidebook*, Guide 114 for further details.

Additional Cautions Regarding Explosives Fires

- ◆ All Explosives: **DO NOT FIGHT EXPLOSIVES FIRES.** Try to keep the fire from reaching explosives. Isolate area. Guard against intruders.
- ◆ Division 1.1, 1.2, 1.3, 1.5 and 1.6 Explosives: Evacuate the area for 1 mile (1600 meters). Consult the 2008 *Emergency Response Guidebook*, Guide 112 for further details.
- ◆ Division 1.4 (other than 1.4S) Explosives: Evacuate the area for 1500 feet (450 meters). Consult the 2008 *Emergency Response Guidebook*, Guide 112 for further details.
- ◆ If explosives are used in areas where evacuation to prescribed distances is not possible, then additional, site specific, emergency procedures are required.

Unusual Fire and Explosion Hazards: May detonate with impact or heating.

Hazardous Decomposition or By-products:

- ◆ Toxic gases or particles may be formed during combustion, such as carbon dioxide, carbon monoxide, hydrogen fluoride, chlorine, oxides of potassium, and others. These products may cause severe eye, nose, and throat irritation or toxic effects.
- ◆ Do not inhale decomposition products.

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Section 6: Accidental Release Measures

- ◆ Do not smoke or provide any open flame in the vicinity of spilled material. Carefully pick up and place items back into cardboard tubes/boxes. Sweep up exposed chemical composition with a natural fiber brush, place in sealable plastic bags, and return to original shipping boxes.
- ◆ Only competent, experienced persons should be involved in cleanup procedures.

Section 7: Handling and Storage

- ◆ Store in accordance with requirements of Subpart K, ATF: *Explosives Law and Regulations* (27 CFR 555.201 – 555.219).
- ◆ Keep away from friction, impact, and heat.
- ◆ Do not consume food, drink, or tobacco in areas where they may become contaminated with these materials.
- ◆ Keep shipping cartons cool and dry.
- ◆ Keep in original packaging until used.

Section 7 notes:

- ◆ Materials removed from the packaging tubes, and not used, must be re-packaged in the original packaging tubes. Place packaging tubes into the sealable plastic bags, and then return to the original shipping boxes.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:	Do not remove disks from their protective paper wrapper
Ventilation:	Not required
Respiratory Protection:	Not required
Eye Protection:	Not required
Skin Protection:	Not required
Other Protective Clothing Or Equipment:	No
Work Hygienic Practices:	Wash hands with soap and water after handling disks
Exposure Guidelines:	None established

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Section 9: Physical and Chemical Properties

Appearance:	Circular Disks, wrapped in paper. ≤ 2.1 " (55 mm) OD x ≤ 0.9 " (25 mm) thick
Odor:	None
Physical State:	Solid
Solubility In Water:	None
Percent Solids By Weight:	100

Section 10: Stability and Reactivity

Stability:	Stable under normal conditions of use, storage, and transportation
Conditions to Avoid (Stability):	Heat, flames, ignition sources, and incompatibles
Incompatibility (Material to Avoid):	Acids, alkalis, some organics
Hazardous Decomposition or By-Products:	Toxic gases or particles may be formed during combustion, such as carbon dioxide, carbon monoxide, hydrogen fluoride, chlorine, oxides of potassium, and others.
Hazardous Polymerization:	Will not occur

Section 11: Toxicological Information

- ◆ Does not present health hazards in normal handling and use.
- ◆ Fumes/smoke generated during use/burning are skin, eye, and respiratory tract irritants.

Toxicity: LD-50/LC-50 mixture – not available

Carcinogenicity: NTP: No
IARC: No
OSHA: No

Section 12: Ecological Information

Do not release product to environment without proper governmental permits.

Section 13: Disposal Considerations

Waste Disposal Method:

- ◆ Dispose of in accordance with *The Resource Conservation and Recovery Act* (40 CFR Parts 260 – 271).

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Section 14: Transport Information

U.S. Department Of Transportation (HMR)

Proper Shipping Name: Articles, explosive, n.o.s. (technical name required)
Hazard Class: 1.4S
ID Number: UN0349
Special Provisions: None
Packing Instruction: 101
Packing Group: II
Label Required: 1.4S

International Maritime Organization (IMDG Code)

Proper Shipping Name: Articles, explosive, n.o.s. (technical name required)
Hazard Class: 1.4S
ID Number: UN0349
Packing Instruction: 101
Packing Group: II
Label Required: 1.4S

International Civil Aviation Organization (ICAO Technical Instructions)

Proper Shipping Name: Articles, explosive, n.o.s. (technical name required)
Hazard Class: 1.4S
ID Number: UN0349
Special Provisions: 178, 274
Packing Instruction: P101
Packing Group: None
Label Required: 1.4S

United Nations (UN Model Regulations)

Proper Shipping Name: Articles, explosive, n.o.s. (technical name required)
Hazard Class: 1.4S
ID Number: UN0349
Special Provisions: 178, 274
Packing Instruction: P101
Packing Group: None
Label Required: 1.4S

Section 15: Regulatory Information

Explosives are highly regulated and may be subject to other municipal, state, regional, and national regulations of the USA and/or other countries that are not listed above. The user should be thoroughly familiar with all regulations applicable to the transportation, storage, handling, use, and disposal of explosives that are applicable to their specific locale.

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Section 16: Other Information

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