



3.125 in. HERO® PerFRAC

0.46 in. EH, HMX, PFC-3121-446

TECHNICAL INFORMATION:

APPLICATION:

HERO®PerFRAC charges are specifically designed to have consistent entry hole sizes, regardless of gun position, to improve the efficiency of fracturing operations in today's unconventional reservoirs.

SPECIFICATIONS:

NET EXPLOSIVE WEIGHT:

21.5 grams

TOTAL CHARGE WEIGHT:

238.2 grams

TEMPERATURE RATING:

400°F - 1 hour
335°F - 24 hours
310°F - 100 hours

PACKAGING:

QUANTITY PER BOX:

50

NET ITEM WEIGHT:

1075 grams

NET CHARGE WEIGHT:

11500 grams

TOTAL PACKAGE WEIGHT:

12000 grams

BOX DIMENSIONS:

14 in. W x 14 in. L x 9 in. D

SHELF LIFE:

5 years (left in original packaging)

PACKAGE TYPE:

Charges in foil bag with desiccant; inside cardboard box with cardboard spacers

SHIPPING:

CLASSIFICATION:

1.4D

DOT NUMBER:

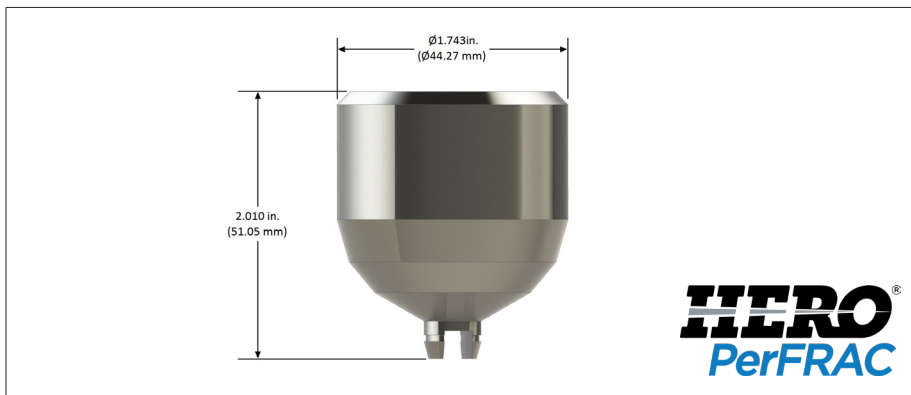
EX1994050290

CE NUMBER:

00 80.EXP.01.0032

UN NUMBER:

UN0440



HOLE SIZE DATA:

CASING	SHOT DENSITY / PHASING	AVG. HOLE SIZE (IN.)	MIN. HOLE SIZE (IN.)	MAX. HOLE SIZE (IN.)	HOLE VARIATION (STDEV)
4.50 in. 11.6# P-110	6 spf / 60°	0.46	0.44	0.48	3.6%
4.50 in. 13.5# P-110	6 spf / 60°	0.47	0.44	0.49	3.8%
5.50 in. 17# P-110	6 spf / 60°	0.45	0.36	0.48	10.8%
5.50 in. 20# P-110	4 spf / 90°	0.45	0.42	0.48	7.7%
5.50 in. 20# P-110	6 spf / 60°	0.46	0.43	0.48	4.7%
5.50 in. 23# P-110	4 spf / 90°	0.45	0.42	0.49	8.3%
5.50 in. 23# P-110	6 spf / 60°	0.45	0.42	0.48	6.2%

PENETRATION DATA - API RP-19B SECTION 2:

FORMATION CORE TYPE	PENETRATION (IN.)	OVERBURDEN (PSI)	UCS (PSI)	POROSITY
Berea	7.97	9500	6201	20.4%
Shale	5.57	9500	19838	6.0%

SYSTEM TESTED:

3.125 in. 6 spf 60° in 5.50 in. 23# P-110

DEBRIS DATA - API RP-19B SECTION 5:

Weight of debris lost at detonation 109.50 grams per linear foot
Total weight of debris lost 199.00 grams per linear foot
Volume of total debris lost 94.79 cm³ per linear foot

GUN SWELL DATA - API RP-19B SECTION 6:

AIR (IN.)	FLUID (IN.)
3.36 (4 spf)	3.31 (6 spf)