

### 英买力地区中生界—新生界油气藏石油包裹体特征及成藏期次

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### The properties of petroleum inclusions and stages of hydrocarbon accumulation in Mesozoic-Cenozoic reservoirs in Yingmaili area of Tabei uplift, Tarim Basin

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摘要      图/表      参考文献(0)      相关文章(11)

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#### 摘要

明确油气的成藏期次及成藏演化历史是当前英买力地区中生界—新生界油气藏勘探亟待解决的关键问题.利用石油包裹体岩相学、微束荧光光谱和显微测温技术,对英买力地区中生界—新生界石油包裹体特征和油气成藏期次开展了详细研究.结果表明:样品中主要观察到发蓝色、蓝白色、亮黄色、弱黄色荧光的石油包裹体;荧光光谱的主峰波长主要集中在470~490 nm和510~540 nm,分别指示近蓝白色和近黄色2种荧光的石油包裹体组合.其中,近黄色石油包裹体的红绿商 $Q$ 在0.48~0.65,色度指数 $CIE-X$ 和 $CIE-Y$ 值在0.345~0.360和0.358~0.375,对应盐水包裹体的均一温度主峰值在80~90°C;近蓝白色石油包裹体的红绿商 $Q$ 在0.20~0.51,色度指数 $CIE-X$ 和 $CIE-Y$ 值在0.302~0.333和0.325~0.352,对应盐水包裹体的均一温度主峰值在120~130°C.结合埋藏史、热演化史模拟结果,明确了英买力地区中生界—新生界油气藏具有2期成藏过程:第1期在8~5 Ma,以形成常规油藏为主,成熟度相对较低,石油包裹体发近黄色荧光;第2期在3 Ma以来,以形成凝析油气藏为主,成熟度较高,石油包裹体发近蓝白色荧光.

**关键词** : 石油包裹体, 成藏期次, 荧光光谱, 英买力地区, 中生界—新生界

#### Abstract :

To clarify the stages and evolution process of hydrocarbon accumulation is presently the key issue of exploring Mesozoic-Cenozoic reservoirs in Yingmaili area of Tabei uplift, Tarim Basin. A detailed study was carried out to determine the properties of petroleum inclusions and the stages of hydrocarbon accumulation in Mesozoic-Cenozoic reservoirs using rock samples from typical wells, through a combination of microscopic examination, micro-beam fluorescence spectroscopy, and micro-thermometric technique. Results showed that petroleum inclusions in reservoirs rocks mainly emitted blue, blue-white, bright yellow, and weak yellow fluorescence. Peak wavelengths of the fluorescence spectra were mainly distributed in the ranges of 470-490 nm and 510-540 nm, corresponding to blue-white and yellow fluorescence, respectively. Of these, petroleum inclusions emitting yellow fluorescence had the red-green quotient of 0.48-0.65 and the chromaticity of 0.345-0.360 ( $CIE-X$ ) and 0.358-0.375 ( $CIE-Y$ ), whereas the corresponding brine inclusions had the main peak of homogeneous temperatures at 80-90°C. Differently, petroleum inclusions emitting blue-white fluorescence had the red-green quotient of 0.20-0.51,  $CIE-X$  of 0.302-0.333, and  $CIE-Y$  of 0.325-0.352, whereas the corresponding brine inclusions had the main peak of homogeneous temperatures at 120-130°C. Combined with simulation analysis of burial history and thermal evolution history, two-stage hydrocarbon accumulation was identified in Mesozoic-Cenozoic reservoirs in Yingmaili area: in the first stage (8-5 Ma), mainly normal reservoirs were formed with relatively low maturity and petroleum inclusions emitting yellow fluorescence; and in the second stage (since 3 Ma), mainly condensate reservoirs were formed with relatively high maturity and petroleum inclusions emitting blue-white fluorescence.

**Key words** : petroleum inclusions hydrocarbon accumulation period fluorescence spectroscopy Yingmaili area Mesozoic-Cenozoic reservoirs

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