

## t3\_card\_fil

(TMY97SzN3k4n8Ur6ZyBfGzdx9C8qhsQqEDu)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_card\_fil X1 X0) \Rightarrow ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))))) \quad (2)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \Rightarrow ((m1\_card\_fil X1 X0) \Leftrightarrow ((\neg k1\_xboole\_0 \in X1) \wedge (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Rightarrow (k9\_subset\_1 X0 X2 X3 \in X1)) \wedge (((X2 \in X1) \wedge (r1\_tarski X2 X3)) \Rightarrow (X3 \in X1))))))) \quad (3)$$

### Theorem 1

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_card\_fil X1 X0) \Leftrightarrow (((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0)))) \wedge ((\neg k1\_xboole\_0 \in X1) \wedge (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Rightarrow (k9\_subset\_1 X0 X2 X3 \in X1)) \wedge (((X2 \in X1) \wedge (r1\_tarski X2 X3)) \Rightarrow (X3 \in X1)))))))$$