ma-join^{0,22}

$M_1 \oplus M_2$
$\equiv_{\text{def}}$ mk-ma(1of(M_1) $\oplus$ 1of(M_2);
1of(2of(M_1)) $\oplus$ 1of(2of(M_2));
1of(2of(2of(M_1))) $\oplus$ 1of(2of(2of(M_2)));
1of(2of(2of(2of(M_1)))) $\oplus$ 1of(2of(2of(2of(M_2))));
1of(2of(2of(2of(2of(M_1))))) $\oplus$ 1of(2of(2of(2of(2of(M_2)))));
1of(2of(2of(2of(2of(2of(M_1)))))) $\oplus$ 1of(2of(2of(2of(2of(2of(M_2))))));
1of(2of(2of(2of(2of(2of(2of(M_1))))))) $\oplus$ 1of(2of(2of(2of(2of(2of(2of(M_2)))))));
1of(2of(2of(2of(2of(2of(2of(2of(M_1)))))))) $\oplus$
1of(2of(2of(2of(2of(2of(2of(2of(M_2))))))));
1of(2of(2of(2of(2of(2of(2of(2of(2of(M_1))))))))) $\oplus$
1of(2of(2of(2of(2of(2of(2of(2of(2of(M_2)))))))));
1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(M_1)))))))))) $\oplus$
1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(M_2))))))))));
1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(M_1))))))))))) $\oplus$
1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(M_2)))))))))))

clarification:

$M_1 \oplus M_2$
$\equiv_{\text{def}}$ mk-ma(fpf-join(IdDeq;1of(M_1);1of(M_2));
fpf-join(KindDeq;1of(2of(M_1));1of(2of(M_2)));
fpf-join(IdDeq;1of(2of(2of(M_1)));1of(2of(2of(M_2))));
fpf-join(IdDeq;1of(2of(2of(2of(M_1))));1of(2of(2of(2of(M_2)))));
fpf-join(product-deq(Knd;Id;KindDeq;IdDeq);1of(2of(2of(2of(2of(
M_1)))));1of(2of(2of(2of(2of(M_2))))));
fpf-join(product-deq(Knd;IdLnk;KindDeq;IdLnkDeq);1of(2of(2of(2of(2of(2of(
M_1))))));1of(2of(2of(2of(2of(2of(
2of(M_2)))))));
fpf-join(IdDeq;1of(2of(2of(2of(2of(2of(2of(M_1)))))));1of(2of(2of(2of(2of(2of(2of(2of(
M_2)))))))));
fpf-join(product-deq(IdLnk;Id;IdLnkDeq;IdDeq);1of(2of(2of(2of(2of(2of(2of(2of(
M_1)))))))));1of(2of(2of(2of(2of(2of(2of(
2of(2of(M_2)))))))));
fpf-join(KindDeq;1of(2of(2of(2of(2of(2of(2of(2of(2of(
M_1)))))))));1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(M_2))))))))));
fpf-join(KindDeq;1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(
M_1)))))))))));1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(
M_2)))))))))));
fpf-join(IdDeq;1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(
M_1)))))))))));1of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(2of(
M_2)))))))))))))

http://www.cs.cornell.edu/Info/Projects/NuPrl/FDLcontent/p0_286125_/p16_86249_{ma-join}.html