Full Solution: $N \leq 20$

Do dynamic programming on subsets. The DP state for a subset $S = \{c_1, c_2, \ldots, c_n\}$ of the cowphabet is $\min_p (\text{evaluate}(p))$ over all $n!$ permutations p of S. The DP transition for all nonempty S is as follows:

$$\mathbf{dp}[S] = \min_{c_j \in S} \left(\mathbf{dp}[S \setminus \{c_j\}] + \sum_{c_k \in S} (\#\text{ occurrences of } c_j c_k) \right)$$

0	1	2	3	4	5	6	7	8	9
m	i	l	d	r	e	d	r	e	e

occ[m->m] -> occ[m][m] occ[20][20]

occ[m->m]=0 occ[d->m]=0
occ[m->i]=1 occ[d->r]=2
occ[m->l]=0 occ[d->e]=0
... ...

0	1	2	3	4	5	6	7	8
m	i	l	d	r	e			

dp[m] =dp[000001]
dp[mi] =dp[000011]
...
dp[me] =dp[100001]
...
dp[dre] =dp[111000]
...
dp[mil] =dp[000111]
...
dp[mildre]=dp[111111]

dp[0]=1表示不做任何组合的时候答案是1

2^5

dp[m]=dp[0]+occ[m->m]

dp[i]=dp[0]+occ[i->i]

dp[mi]=min { dp[i]+(occ[m->m]+occ[m->i])
           { dp[m]+(occ[i->m]+occ[i->i])

...

ans=dp[mildre]