

R & D REPORT

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LABORATORY REPORT CODE
HET K-1688-(21) REV 8(E)
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LAB. NO. PROBLEM NO.

DEPARTMENT

Toxicology Research Laboratory

TITLE

ACUTE PERCUTANEOUS ABSORPTION POTENTIAL OF TWO SAMPLES OF

ACRYLONITRILE

PAGES
IN FULL
REPORT
1

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12-9-77
*K. J. Olson*This
report
is:☐ INTERIM☒ FINAL

and mainly:

☒ NEW☐ REVIEW

DATA REFERENCES (book and page):

None

(Refer also to earlier related reports and publications.)

PATENT STATUS:

☐

disclosure submitted

☐

case filed

☐

no patent action required

DESCRIPTIVE SUMMARY WITH CONCLUSIONS:

The acute percutaneous absorption LD50 for rabbits for acrylonitrile has been reported in the literature at 220 mg/kg and, then again, greater than 1600 mg/kg. A clear colorless liquid sample of acrylonitrile dated 3/15/77 was submitted to the Toxicology Research Laboratory for toxicological evaluation by acute percutaneous absorption. A comparison to methacrylonitrile was requested.

Using 2 male and 2 female New Zealand albino rabbits per dose level, the LD50 was determined to be 63 mg/kg for undiluted acrylonitrile. A similar test was conducted on a duPont production sample with identical results. The acute percutaneous LD50 for rabbits for undiluted methacrylonitrile was between 12.5 and 25 mg/kg (see report HET K7773-2). Both of these materials are highly toxic by this route, with methacrylonitrile being more toxic than acrylonitrile. Exposure to either material requires immediate thorough flushing of exposed areas and removal of contaminated clothing, including shoes. Then, prompt medical attention should be obtained if a gross exposure occurred.

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