Express; CASRN 101200-48-0

Human health assessment information on a chemical substance is included in the IRIS database only after a comprehensive review of toxicity data, as outlined in the IRIS assessment development process. Sections I (Health Hazard Assessments for Noncarcinogenic Effects) and II (Carcinogenicity Assessment for Lifetime Exposure) present the conclusions that were reached during the assessment development process. Supporting information and explanations of the methods used to derive the values given in IRIS are provided in the guidance documents located on the IRIS website.

STATUS OF DATA FOR Express

File First On-Line 01/01/1989

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	yes	01/01/1989
Inhalation RfC (I.B.)	not evaluated	
Carcinogenicity Assessment (II.)	not evaluated	

I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

I.A. Reference Dose for Chronic Oral Exposure (RfD)

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300
Last Revised — 01/01/1989

The oral Reference Dose (RfD) is based on the assumption that thresholds exist for certain toxic effects such as cellular necrosis. It is expressed in units of mg/kg-day. In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Please refer to the Background Document for an elaboration of these concepts. RfDs can also be derived for the noncarcinogenic health effects of

substances that are also carcinogens. Therefore, it is essential to refer to other sources of information concerning the carcinogenicity of this substance. If the U.S. EPA has evaluated this substance for potential human carcinogenicity, a summary of that evaluation will be contained in Section II of this file.

I.A.1. Oral RfD Summary

Critical Effect	Experimental Doses*	UF	MF	RfD
Elevated serum bilirubin and AST levels, increased urinary volume **1-Year Dog Feeding Study** **du Pont, 1986a**	NOEL: 25 ppm (male) (0.79 mg/kg/day) LEL: 250 ppm (male) (8.16 mg/kg/day)	100	1	8E-3 mg/kg/day

* Conversion Factors: Actual dose tested

I.A.2. Principal and Supporting Studies (Oral RfD)

E.I. du Pont de Nemours and Company, Inc. 1986a. MRID No. 402455-12. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Male and female beagle dogs (5 animals/sex/dose) were fed either 0, 25, 250, and 1500 ppm (Males: 0, 0.79, 8.16, and 51.46 mg/kg/day; Females: 0, 0.90, 8.18, 52.02 mg/kg/day) IN L5300 for 371 days. After termination of dosing, the dogs were examined for changes in hematology, clinical chemistry, urinalysis, gross or histopathological lesions, and ophthalmologic changes.

No treatment related effects were observed at 25 ppm (0.79 mg/kg/day) in male dogs, while at 250 ppm (8.16 mg/kg/day) several effects were observed: elevated serum bilirubin levels reported at weeks 12, 26, and 52; elevated AST serum levels at 26 and 52 weeks; and increased urinary volume at 36 weeks. At the HDT, 1500 ppm (51.46 mg/kg/day), elevated serum creatinine levels, increased urinary volume, and a 20% decreased in body weight gain was observed. Thus the NOEL and LEL for male dogs is 25 ppm (0.79 mg/kg/day) and 250 ppm (8.16 mg/kg/day), respectively. No effects were observed in female dogs at 25 ppm (0.90

mg/kg/day) or 250 ppm (8.18 mg/kg/day), whereas at 1500 ppm (52.02 mg/kg/day) the following effects were observed: elevated creatinine levels in the serum at 4, 12, 26, 36, and 52 weeks; elevated serum AST levels at 4 weeks; elevated globulin levels at 12 weeks; elevated blood bilirubin levels at 26 weeks; and an 18.2% decrease in body weight gain. Therefore the NOEL and LEL for female dogs is 250 ppm (8.18 mg/kg/day) and 1500 ppm (52.02 mg/kg/day), respectively.

I.A.3. Uncertainty and Modifying Factors (Oral RfD)

UF — An uncertainty factor of 100 was used to account for the inter- and intraspecies differences.

MF — None

I.A.4. Additional Studies/Comments (Oral RfD)

Data Considered for Establishing the RfD

1) 1-Year Feeding - dog: Principal study - see previous description; core grade minimum

2) 2-Year Feeding (oncogenic) - rat: Systemic NOEL=25 ppm (1.25 mg/kg/day); Systemic LEL=250 mg/kg/day (12.5 mg/kg/day) (decreased body weight gain in males and females); core grade minimum (du Pont, 1987a)

3) 2-Generation Reproduction - rat: Parental NOEL=25 ppm (1.25 mg/kg/day); Parental LEL=250 ppm (12.5 mg/kg/day) (decreased body weight gain in F1 females); Reproductive NOEL=25 ppm (1.25 mg/kg/day); Reproductive LEL=250 ppm (12.5 mg/kg/day) (decreased body weight gain during lactation for F1b and F2b pups); Developmental NOEL=25 ppm (1.25 mg/kg/day); Developmental LEL= 250 ppm (12.5 mg/kg/day) (decreased absolute spleen weights in F2b pups); core grade minimum (du Pont, 1986b)

4) Teratology - rat: Maternal NOEL=20 mg/kg/day; Maternal LEL=125 mg/kg/day (decreased body weight gain and food consumption, increased liver to body weight ratio); Developmental NOEL=20 mg/kg/day; Developmental LEL=125 mg/kg/day (decreased body weight); At 500 mg/kg/day, HDT, increased resorptions, fetal deaths, and incomplete ossification were observed; core grade guideline (du Pont, 1985a)

5) Teratology - rabbit: Maternal NOEL=20 mg/kg/day; Maternal LEL=80 mg/kg/day (HDT; decreased food consumption, increased abortions); Developmental NOEL=20 mg/kg/day;

Developmental LEL=80 mg/kg/day (HDT; 10% decrease in body weight compared to controls, difference was not statistically significant); core grade minimum (du Pont, 1986c)

Other Data Reviewed:

1) Oncogenicity - mouse: Systemic NOEL=20 ppm (3 mg/kg/day); Systemic LEL=200 ppm (30 mg/kg/day) (males: increased incidence of seminiferous degeneration and oligospermia, 10% decrease in body weight gain at 90 days); core grade supplementary) (du Pont, 1987b)

2) 90-Day Feeding - dog: NOEL=2500 ppm (62.5 mg/kg/day) (HDT); core grade minimum (du Pont, 1985b)

3) 90-Day Feeding/1-Generation Reproduction - rat: NOEL=100 ppm (5 mg/kg/day); LEL=1750 ppm (87.5 mg/kg/day) (decrease body weight gain and food consumption and food efficiency; decrease absolute heart, brain, liver, and kidney weights; relative organ weights for heart, liver, kidneys, testes, and spleen were increased; serum glucose, globulin, and cholesterol were decreased); Developmental NOEL=2500 ppm (125 mg/kg/day); Developmental LEL=5000 ppm (250 mg/kg/day) (decreased pup viability and weight gain); core grade minimum for feeding, supplementary for reproduction (du Pont, 1985c)

Data Gap(s): None

I.A.5. Confidence in the Oral RfD

Study — High
Database — High
RfD — High

The critical study is of good quality and is given a high confidence rating. Additional studies are also of good quality; therefore, confidence in the database can be considered high to medium. Confidence in the RfD can also be considered high to medium.

I.A.6. EPA Documentation and Review of the Oral RfD

Source Document — This assessment is not presented in any existing U.S. EPA document.

Other EPA Documentation — Pesticide Registration Files

Agency Work Group Review — 10/12/1988

Verification Date — 10/12/1988

Screening-Level Literature Review Findings — A screening-level review conducted by an EPA contractor of the more recent toxicology literature pertinent to the RfD for Express conducted in November 2001 did not identify any critical new studies. IRIS users who know of important new studies may provide that information to the IRIS Hotline at hotline.iris@epa.gov or (202)566-1676.

I.A.7. EPA Contacts (Oral RfD)

Please contact the IRIS Hotline for all questions concerning this assessment or IRIS, in general, at (202)566-1676 (phone), (202)566-1749 (FAX) or hotline.iris@epa.gov (internet address).

I.B. Reference Concentration for Chronic Inhalation Exposure (RfC)

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300

Not available at this time.

III. [reserved]
IV. [reserved]
V. [reserved]

VI. Bibliography

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300

VI.A. Oral RfD References

E.I. du Pont de Nemours and Company, Inc., 1985a. EPA Accession No. 073790. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1985b. EPA Accession No. 073788- 073789. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1985c. EPA Accession No. 0773787. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1986a. MRID No. 402455-12. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1986b. MRID No. 402455-15. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1986c. MRID No. 402455-14. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1987a. MRID No. 402455-11. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

E.I. du Pont de Nemours and Company, Inc., 1987b. MRID No. 402455-13. Available from EPA. Write to FOI, EPA, Washington D.C. 20460.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300

Date	Section	Description
01/01/1989	I.A.	Oral RfD summary on-line
12/03/2002	I.A.6.	Screening-Level Literature Review Findings message has been added.

VIII. Synonyms

Substance Name — Express
CASRN — 101200-48-0
Primary Synonym — IN L5300
Last Revised — 01/01/1989

- 101200-48-0
- BENZOIC ACID, 2-[[[[N-(4-METHOXY-6-METHYL-1,3,5-TRIAZIN-2YL)-N-METHYLAMINO] CARBONYL]AMINO]SULFONYL]-METHYL ESTER
- DPX L5300
- EXPRESS
- INL-5300
- INL-5300-22