

別紙2 原材料のTDN又はMEに関する申請書

1. 名称	2-デアミノ-2-ヒドロキシメチオニン																	
2. 定義	飼料添加物であること																	
3. 製造方法及び製造工程	製造フローを別紙3に示す																	
4. 対象家畜 (1) 使用目的 (2) 使用割合 又は使用量	すべての家畜等 メチオニンの補給 0.01~0.3%																	
5. 成分量 (1) 一般成分	水分		粗たん白質		粗脂肪		可溶無窒素物		粗繊維		粗灰分		総エネルギー, kcal/kg				備考	
	10.9		0.0		0.0		89.1		0.0		0.0		4995				別紙4及び資料1	
(2) 消化率 可消化成分	鶏							豚					牛					備考
	CP	Fat	Fib	NFE	TDN	代謝率	ME, kca	CP	Fat	Fib	NFE	TDN	CP	Fat	Fib	NFE	TDN	
	0.0	0.0	0.0	100.0	-	79.9	3991	0.0	0.0	0.0	100.0	89.1	0.0	0.0	0.0	100.0	89.1	
(3) 特殊成分	なし																	
6. 備考	1. 可溶性無窒素物 (89.1%) は、資料3、および別紙4の25点の分析値の平均値 2. 総エネルギー (4995kcal/kg) は、資料1のGE、20.9MJ/kg (20.9MJ×0.239cal/J) を用いた 3. NFEの消化率 (100.0%) は、資料2の拡散による吸収率、100%、を用いた 4. 代謝率 (79.9%) は、資料1の代謝率 (ME/GE、16.7÷20.9) を用いた 5. 鶏ME (3991kcal/kg) は、資料1の家禽のAME _N 、16.7MJ/kg (16.7MJ/kg×0.239cal/J) を用いた																	

別紙４．分析値（資料３より）

	NFE	水分
ロット番号	DL-Metionine Hydroxy Analogue	100－NFE
CB17143221	89.0	11.0
CB17143222	89.0	11.0
CB17159123	89.2	10.8
CB17202221	89.1	10.9
CB17307122	89.4	10.6
CB17322221	89.0	11.0
CB17327221	88.9	11.1
CB17333221	89.2	10.8
CB17336222	89.1	10.9
CB17337122	89.0	11.0
CB17338221	88.9	11.1
CB17339222	89.4	10.6
CB17342222	89.1	10.9
CB17343123	88.9	11.1
CB17343221	88.9	11.1
CB17344121	89.0	11.0
CB17347221	89.1	10.9
CB17349222	89.2	10.8
CB17351221	88.9	11.1
CB17352123	89.1	10.9
CB17353222	89.1	10.9
CB17354121	89.0	11.0
CB17356122	89.0	11.0
CB17358222	88.9	11.1
CB17360121	89.0	11.0
n	25	25
av	89.1	10.9
stdev	0.14	0.14



NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17143221
DATE OF MANUFACTURE: 23 May 2017
DATE OF ANALYSIS: 24 May 2017
EXPIRATION DATE: 23 May 2022
DATE OF PACKAGING: 23 May 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

Approved by:

STEVEN M. BASS
EXEC. MANAGER OPERATIONS SERVICES

The value and properties stated above are based upon test and analysis of samples of material. The exclusive commitment of Novus with respect to such values and properties is as set forth in the sales contract between your company and Novus for such material or the acknowledgment of Novus for the above described shipment of material, whichever is applicable.



NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17147122
DATE OF MANUFACTURE: 27 May 2017
DATE OF ANALYSIS: 28 May 2017
EXPIRATION DATE: 27 May 2022
DATE OF PACKAGING: 27 May 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17159123
DATE OF MANUFACTURE: 08 June 2017
DATE OF ANALYSIS: 10 June 2017
EXPIRATION DATE: 08 June 2022
DATE OF PACKAGING: 08 June 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.2

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17202221
DATE OF MANUFACTURE: 21 July 2017
DATE OF ANALYSIS: 23 July 2017
EXPIRATION DATE: 21 July 2022
DATE OF PACKAGING: 21 July 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17307122
DATE OF MANUFACTURE: 03 November 2017
DATE OF ANALYSIS: 04 November 2017
EXPIRATION DATE: 03 November 2022
DATE OF PACKAGING: 03 November 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.4

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17322221
DATE OF MANUFACTURE: 18 November 2017
DATE OF ANALYSIS: 19 November 2017
EXPIRATION DATE: 18 November 2022
DATE OF PACKAGING: 18 November 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17327221
DATE OF MANUFACTURE: 23 November 2017
DATE OF ANALYSIS: 24 November 2017
EXPIRATION DATE: 23 November 2022
DATE OF PACKAGING: 23 November 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

Approved by:

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17333221
DATE OF MANUFACTURE: 29 November 2017
DATE OF ANALYSIS: 30 November 2017
EXPIRATION DATE: 29 November 2022
DATE OF PACKAGING: 29 November 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.2

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17336222
DATE OF MANUFACTURE: 02 December 2017
DATE OF ANALYSIS: 03 December 2017
EXPIRATION DATE: 02 December 2022
DATE OF PACKAGING: 02 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

Approved by:

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17337122
DATE OF MANUFACTURE: 03 December 2017
DATE OF ANALYSIS: 04 December 2017
EXPIRATION DATE: 03 December 2022
DATE OF PACKAGING: 03 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17338221
DATE OF MANUFACTURE: 04 December 2017
DATE OF ANALYSIS: 05 December 2017
EXPIRATION DATE: 04 December 2022
DATE OF PACKAGING: 04 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

Approved by:

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17339222
DATE OF MANUFACTURE: 05 December 2017
DATE OF ANALYSIS: 06 December 2017
EXPIRATION DATE: 05 December 2022
DATE OF PACKAGING: 05 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.4

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17342222
DATE OF MANUFACTURE: 08 December 2017
DATE OF ANALYSIS: 09 December 2017
EXPIRATION DATE: 08 December 2022
DATE OF PACKAGING: 08 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17343123
DATE OF MANUFACTURE: 09 December 2017
DATE OF ANALYSIS: 10 December 2017
EXPIRATION DATE: 09 December 2022
DATE OF PACKAGING: 09 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

Approved by:

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17343221
DATE OF MANUFACTURE: 09 December 2017
DATE OF ANALYSIS: 10 December 2017
EXPIRATION DATE: 09 December 2022
DATE OF PACKAGING: 09 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17344121
DATE OF MANUFACTURE: 10 December 2017
DATE OF ANALYSIS: 11 December 2017
EXPIRATION DATE: 10 December 2022
DATE OF PACKAGING: 10 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17347221
DATE OF MANUFACTURE: 13 December 2017
DATE OF ANALYSIS: 14 December 2017
EXPIRATION DATE: 13 December 2022
DATE OF PACKAGING: 13 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

Approved by:

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17349222
DATE OF MANUFACTURE: 15 December 2017
DATE OF ANALYSIS: 16 December 2017
EXPIRATION DATE: 15 December 2022
DATE OF PACKAGING: 15 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.2

Approved by:

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20 RESEARCH PARK DRIVE
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DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17351221
DATE OF MANUFACTURE: 17 December 2017
DATE OF ANALYSIS: 18 December 2017
EXPIRATION DATE: 17 December 2022
DATE OF PACKAGING: 17 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17352123
DATE OF MANUFACTURE: 18 December 2017
DATE OF ANALYSIS: 19 December 2017
EXPIRATION DATE: 18 December 2022
DATE OF PACKAGING: 18 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17353222
DATE OF MANUFACTURE: 19 December 2017
DATE OF ANALYSIS: 20 December 2017
EXPIRATION DATE: 19 December 2022
DATE OF PACKAGING: 19 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.1

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17354121
DATE OF MANUFACTURE: 20 December 2017
DATE OF ANALYSIS: 21 December 2017
EXPIRATION DATE: 20 December 2022
DATE OF PACKAGING: 20 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17356122
DATE OF MANUFACTURE: 22 December 2017
DATE OF ANALYSIS: 24 December 2017
EXPIRATION DATE: 22 December 2022
DATE OF PACKAGING: 22 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

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NOVUS INTERNATIONAL INC.
20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17358222
DATE OF MANUFACTURE: 24 December 2017
DATE OF ANALYSIS: 25 December 2017
EXPIRATION DATE: 24 December 2022
DATE OF PACKAGING: 24 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	88.9

Approved by:

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20 RESEARCH PARK DRIVE
ST. CHARLES, MO 63304

DATE: 04 November 2018
PRODUCT: 20000105
PRODUCT DESCRIPTION: ALIMET BULK
LOT NUMBER: CB17360121
DATE OF MANUFACTURE: 26 December 2017
DATE OF ANALYSIS: 26 December 2017
EXPIRATION DATE: 26 December 2022
DATE OF PACKAGING: 26 December 2017

CERTIFICATE OF ANALYSIS

CHARACTERISTIC	SPECIFICATION	RESULTS
Appearance	Clear, amber to dark amber liquid	Pass
DL-Methionine Hydroxy Analogue, wt%	≥ 88	89.0

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合成アミノ酸

項目	塩酸L-リジン	L-スレオニン	L-トリプトファン	D,L-メチオニン	メチオニン水酸化体
現物として					
乾物(%)	99.5	99.5	99.5	99.5	88.0
粗たん白質(%) ¹	95.4	73.1	85.3	58.4	0²
リジン(%)	79.8				
スレオニン(%)		99			
トリプトファン(%)			98.5		
メチオニン(%)				99.0	?³
総エネルギー(MJ/kg)	20.0⁴	17.2	27.5	23.6	20.9⁵
(kcal/kg)	4,780	4,111	6,573	5,640	4,995
豚(肥育豚、母豚)					
可消化エネルギー(MJ/kg)	20.0	17.2	27.5	23.6	20.9
(kcal/kg)	4,780	4,111	6,573	5,640	4,995
代謝エネルギー(MJ/kg)	20.0	15.8	25.8	22.4	19.8
(kcal/kg)	4,780	3,776	6,166	5,354	4,732
正味エネルギー(MJ/kg)	14.1	12.3	20.0	17.3	15.3
(kcal/kg)	3,370	2,940	4,780	4,135	3,657
鶏(雄鶏、ブロイラー)					
見かけの代謝エネルギー(MJ/kg)	14.0	12.6	21.7	19.4	16.7
(kcal/kg)	3,346	3,011	5,186	4,637	3,991
ウサギ					
可消化エネルギー(MJ/kg)	20.0	17.2	27.5	23.6	20.9
(kcal/kg)	4,780	4,111	6,573	5,640	4,995

(1 ジュール=0.239 カロリーとして計算)

化学合成あるいは発酵により製造される市販の上記アミノ酸は、単胃動物では完全に吸収されると仮定した。これは、豚の標準化された消化率と家禽の真の消化率が100%であることを意味する。しかし、メチオニン水酸化体の場合にはこの仮説は適応されない(注3参照)。

- 1 値は窒素含量に6.25を乗じた値である。これらの製品はタンパク質を含まないが、通常のタンパク質源と遊離のアミノ酸の両方を含む飼料の最終的なたん白率含量を計算するときにこの値が役立つ。
- 2 この製品は、メチオニンのアミノ基が水酸基で置換されているので、窒素を含まず、よってタンパク質を含まない。
- 3 厳密に言うと、メチオニン水酸化体はメチオニンを含んでおらず、このアミノ酸に変換される必要がある。完全に変換された場合、この変換の理論値は、100gの製品(乾物88%)で87gとなる。この製品のうちの20~25%は単量体ではなく、数個の単量体の重合したものであることに注意すべきで、このことがメチオニンと栄養的に等価であるかどうかに影響している。試験研究では、メチオニンに比したこの製品の栄養価は、試験方法、測定項目、解析手法により、大きく変動(60~100%)している。結果として、100gのこの製品(乾物88%)のメチオニン等価は、52gから87gの間で変動することとなる。
- 4 結晶リジンから計算した値
- 5 結晶メチオニンから計算した値